Encyclopaedia of Yoga for Common Diseases

Volume I

- **Heart Diseases**
- **Diabetes**
- **Backaches**
- **Arthritis**
- **Asthma**

Volume II

- **Skin Diseases**
- **Hypertension**
- **Obesity**
- **Headache**

Volume III

- **Alopecia (Baldness)**
- **Constipation**
- **Stress**

Volume IV

- **Depression**
- **Menopause**
- **Impotency**

Volume V

- **Personality Disorders**
- **Stomach Diseases**
- **ENT Diseases**

Volume VI

- **Amnesia (Loss of Memory)**
- **HIV and AIDS**

Encyclopaedia of Yoga for Common Diseases

In 6 Vols.

Vol. III

Alopecia (Baldness), Constipation and Stress

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Contents

Introduction 779

Part-X: Alopecia (Baldness)

1. Hair Culture 783
2. Alopecia (Baldness) and Its Varieties 805
3. Causes of Alopecia and Hair Disorders 813
4. Yoga—Meaning and Relevance 817
5. Asanas 821
6. Prana and Pranayama 851
7. Diet—Alopecia and Hair Disorder 859

Part-XI: Constipation

1. The Digestive System 869
2. Constipation and Its Causes 879
3. The Yoga System 885
4. Yogasanas 897
5. The Science of Breathing 921
6. The Milk Therapy 927
7. The Diet Therapy 937

Part-XII: Stress

1. The Nervous System 949
2. Stress and Its Causes 961
3. Stress and Emotions 973

4. Stress and Sleep Disorders 983
5. Stress Related Hypertension and Other Diseases 991
6. Society, Drugs and Drug Addiction 1007
7. Yoga—Meaning and Relevance 1027
8. Stress and Kundalini Yoga 1043
9. Asanas 1055
10. Stress and Pranayama 1077
11. Yoga Meditation 1089
12. Stress and Yogic Diet 1103
13. The Yogic Relaxation 1123

"By ourselves is evil done,
By ourselves we pain endure,
By ourselves we make us pure.
No one helps us but ourselves,
No one can and no one make
We ourselves must tread the path,
Buddhas only guide the way..."

-Dhampad

Introduction

Alopecia (Baldness)

This part is designed to give the reader some basic information about alopecia (baldness), hair disorders and benefits of yogic treatment. In addition, this part serves as a guide to basic understanding of the problems that are associated with alopecia and hair disorders. Since alopecia and hair disorders are the problems inseparably bound up with skin tissues, hair producing structures and blood supply. Hair is affected early in protein deficiency, iron deficiency and zonic deficiency. All these have been discussed in detain in the chapter diet and alopecia.

The role of yogasanas, pranayama and yogic diet have been discussed in the book. Now asanas and pranayama and diet can prevent or cure hair disorders and hair loss.

Constipation

Yoga has its own therapy which is a specialised form or yogic culture. Constipation is a symptom not a disease. Constipation results when there is wrong diet inadequate liquids, stress and anxiety, irregular habits, lack of exercise and sedentary life style. This part is designed to give the reader some basic information about constipation and its cure by yoga system. In addition the book serves as guide to basic understanding of the problems that are associated with constipation. The essence of yogic treatment, diet, asanas, pranayama and milk therapy have been discussed in detail.

Each asana and pranayama exercise have a specific aim. Only those asanas and pranayama exercises which

can remove constipation have been discussed in this book.

Stress

Urbanization along with Industrialization and commercialization, in the face of fast growing urban population has alienated modern man from Nature. This disharmony with the Nature has introduced artificiality in his life and living patterns. Modern man has reached a stage where race for mechanical comforts and ever increasing fastness of life are putting unbearable strains and stresses on his body and mind. It is this stress which has made man victim of many diseases and psychic disorders.

Yoga is a science by itself. The science of yoga and the science of the material are to unite in this century. Yoga is an art too. It is an art of living, a way of life. Yoga has also commercial aspect, not only in commercialization of therapy but also having its own impact on western medical system on multinational drug companies. Therefore through science, art and commerce. Yoga is expected to bring a new Revolution.

Brain is the most important organ of the body through which we have developed our consciousness. The purpose of yoga is to restore the function of the central nervous system to normalcy. Yoga system is the most scientific system for stress reduction and for treating and preventing stress- related diseases. Yoga through its eight limbs, Yama, Niyama, Asanas, Pranayama, Pratyhara, Dharna, Dhyana, Samadhi can help harmonious development of mind and body. Yoga alone would help greatly to control neuro-humoral changes. Yoga ethics, pranayama and meditation can serve as panacea for modern physical and mental disease and disorders.

In our stress-torn world let all enjoy peace and normal health by the science of yoga.

PART-X

ALOPECIA (BALDNESS)

1

Hair Culture

Who does not want to have long, healthy and beautiful hair? Who does not want to have good looks and charming personality ?

History of hair is as old as the birth of man. Though hair has no vestige of vital function, yet its psychological functions seem immeasurable. If the inevitability of scalp boldness makes it relunctantly tolerable to genetically-disposed men and women, loss of hair from the scalp is no less distressing than growth of body or facial hair in excess of the culturally acceptable amount. The evolutionary history of hair is no less surprising. Whatever its origin, it is clear that warm-blooded mammals owe much of their evolutionary seccess to the properties of the hairy pelage as a heat insulator. Paradoxically means movement from his ancestral forest home to populate the globe is linked with a reversion to relative nudity and an ability to keep cool. Moreover hair serves other purposes. In particular it is concerned with sexual and social communication by constructing adornments such as the neck of the lion or the beard of the human male, or assisting in the dispersal of scents created by complexed of sebaceous or apocrine glands. For these evolutionary reasons, hair follicles are not all under Identical control mechanisms. To match the animal pelage to seasonal changes in ambient

temperature of environmental background requires moulting and replacement of the hairs. The control of sexual hair growth must be differentiated from that of the moult cycle. The development of pubic, axillary and other body hair is delayed until puberty because it is dependent upon androgens in both sexes, that male hormones are in contrast. Different people have different kinds of hair---. It can be coarse, medium fine, curly, wavy, straight, thick, thin or in-between. Hair groups from follicles which are stocking like in pushings of the superficial epithelium each of which encloses at its base a small stud of dermic known as the derminal Papilla. The cylinder of the hair may be regarded as a holocrine secretion arising by division of cells surrounding the papilla in a region known as the bulb. (Fig. 1.A) The follicles are slanted in the dermis and the longer ones extend into the adipose layer. An oblique muscle, the arrector pili runs from a point in the mild region of the follicle wall to the dermo epidermal junction. In all mammals, including man, hair follicles show intermittent activity. Thus each hair grows to a maximum length, is retained for sometime without further growth, and is eventually shed and replaced.

The signs of hair follicles appear first in the regions of the eye-brows and chin at about 9 weeks of embryonic development and in other region in the fourth month and by 25 weeks the full complement of follicles is established. As the body surface increases, there is a decrease in the actual density of follicles. Under normal circumstances new follicles cannot develop in adult skin. The total number of follicles in an adult man has been estimated about 5 million which about one million are in the head and 100000 in the scalp on the cheek and forehead, the average density of follicles of all types has been recorded as around 800 per cm. where as on the thigh and leg, it was only 50 per cm.

The Active Follicles

The bulk of any hair is formed by a thick cortex made up of elongated keratinised cells cemented together, which in pigmented hairs contain granules of melanin. The cortex is surrounded by a cuticle and may also have a continuous core or medulla. Although the cuticle is formed as a single layer, the cells become slowly imbicated as they move perpherally. The outer cells

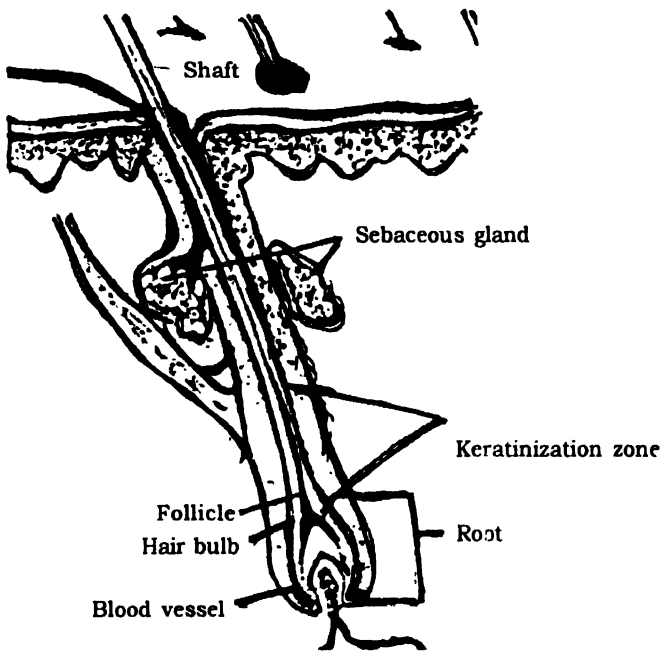


Fig. 1.A: The Structure of Hair

overlap, their free edges directed towards the tip and they interlock with the cutile of the surrounding inner root sheath. The inner root sheath consists of layers. It is formed in pace with the hair and its keratinised cells are ultimately desquamated. Investing it is the outer root

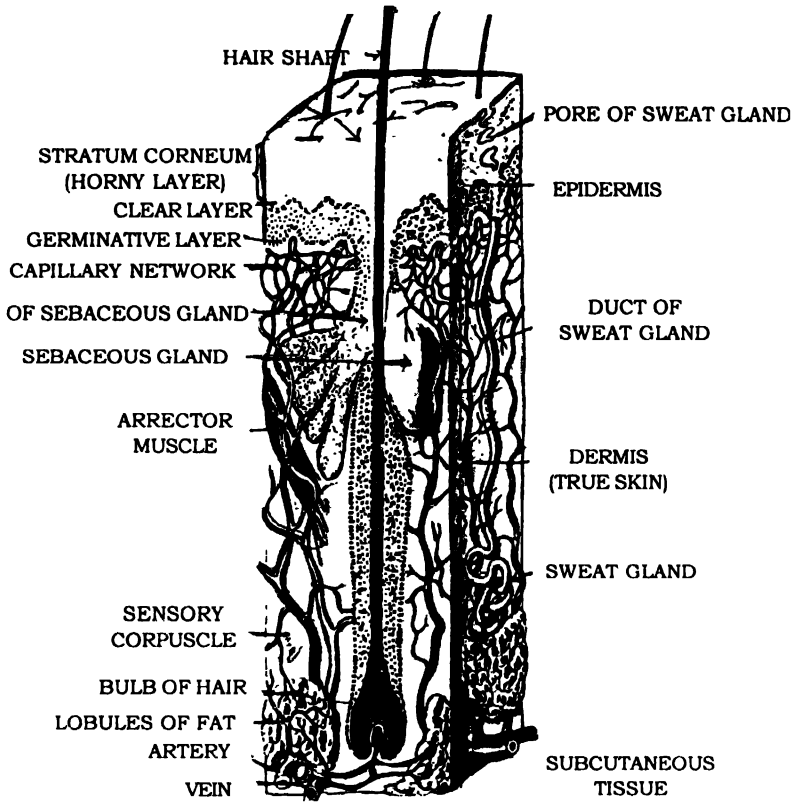


Fig. 1.B: Magnified Cross Section of the Skin

sheath which is continuous with the superficial epithelium and this is itself enclosed in a non-cellular partition known as the glassy membrane. The entire follicle is surrounded by a connective tissue sheath formed of collagenous fibres. Flaments known as mocrofibrils have long been recognized in keratinising cells and believed to bind up to form a macrofibris. It is now realized that all cells contain filaments of several size ranges, including six major types of Intermediate filaments.

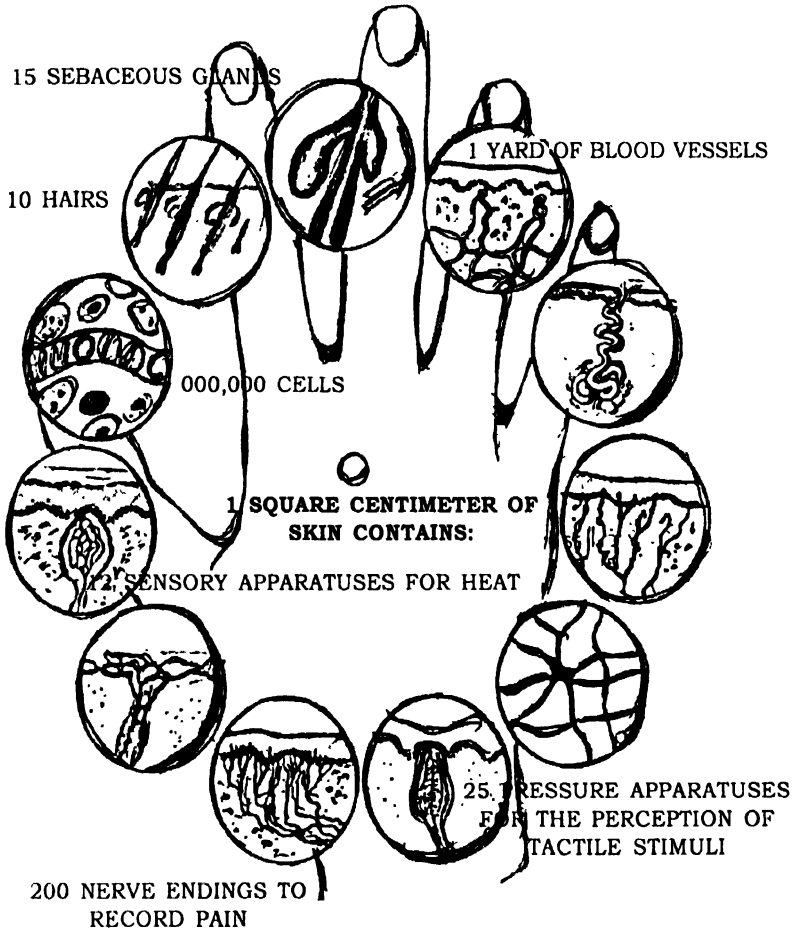


Fig. 1.C: Structures in the Skin

The skin is a fibroelastic membrane which may be called the living envelop of the human body. It is complex in structure and endowed with active and passive functions so that it affords covering and protection to the deeper tissues, and receives impressions from the external world to which it is continually exposed. It is a

continuous covering merging into the mucous membrane at all mucocutaneous orifices. (Fig. 1.B) It is closely related to the structures beneath through its connective tissue, blood vessels, nerves and lymphatics. The surface of the skin is approximately smooth but careful Inspiration reveals numerous ridges, furrows and pores. The ridges are caused by the row-like arrangement of the cutaneous papilae and may assume straight or curved lines. (Fig. 1.C) The minute depressions known as pores represent the orifices of the follicles and glands of the skin. For the purpose of giving roundness do the angles and curves of the body, the skin varies greatly in thickness different regions. It is thickest on the buttocks, the palms of the hands and soles of the feet and thinnest on the eye-lids and prepuce Generally where the areolar tissue is dense and considerable adipose deposit normally exists. The attachment of the skin to the parts beneath is close and firm and its mobility is limited. Where mobility is essential, as around the joints, there is little or no fat and the areolar tissue is loose. Other differences besides that of thickness may be noted as influenced by age, sex, race, health and climate. In fact there are certain variations in different locations upon the same individual. Thus the colour may range from the fair skin of the blood to the black skin of the negro, from the rosy pink of an infants skin to the dark colour of the genitocrural regions of the aged. The pigment which causes the varying colour in different races and individuals and under varying circumstances is located in the deeper protoplasmic areas of the epidermis. The external epidermal layers are composed of transparent flattened epithelial cells which shrived up into polymorphous scales as they approach the surface and are constantly although invisibly. Thrown off and constantly renewed below. It is by this process of continual repair that the epithelial covering of the skin is preserved in a healthy

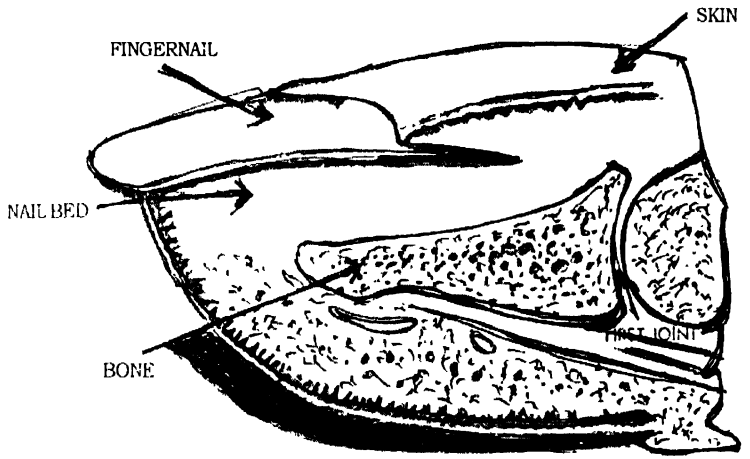


Fig. 1.D(a): Magnified Cross Section of the Finger

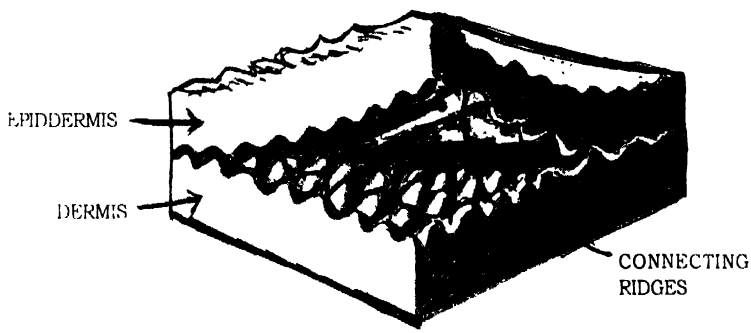


Fig. 1.D(b): Magnified Details of Skin Ridges

condition by the activity of its own protoplasm. The natural secretion of the skin which continually anoints its surface making it comparatively impermeable, acts as a passive barrier to a too rapid loss of fluids from whin and protects from Irritants, variations in temperature and from invasion of bacteria from without. A knowledge of the anatomy and physiology of the skin is essential in order that the nature of pathological changes in the skin may be understood. The skin is found to be composed of two constant organic parts. The corium and

the epidermics. (Fig. 1.D) But for practical purposes, a third subdivision, the subcutaneous tissue, is usually described. Several less constant parts such as the sebaceous glands, sweat glands, hair, nails, pigment blood vessels, lymphatics, nerves and muscles must be considered in order to appreciate the complex nature of the skin.

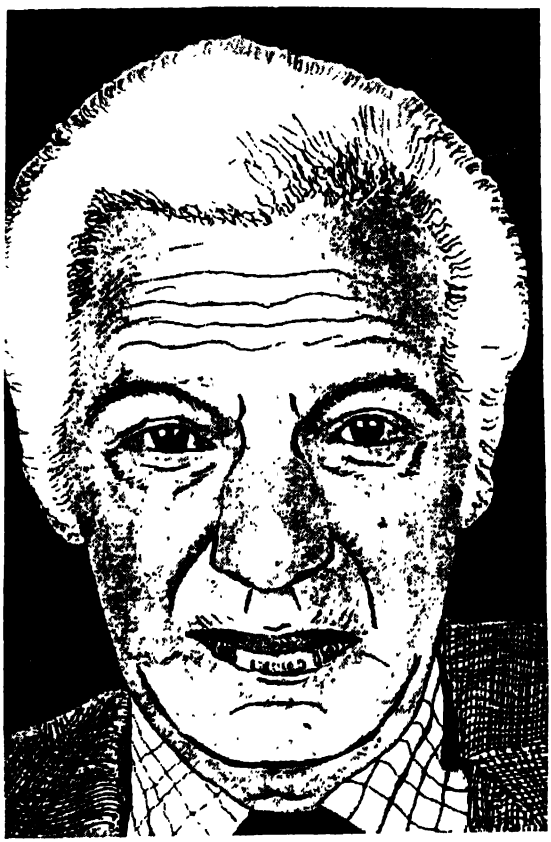


Fig. 1.E

The skin is well endowed with medullated and non-medullated sensory nerve-fibres, each in certain

instances being substituted for the other, or they may be found in combination. These elements from the cerebral and spinal nerve-system enter the skin and form horizontal bundle of nerve twigs in the subcutaneous tissue. From there, branches pass upward with the blood vessels through the corium, and divide into numerous remifications in the papillary layers.



Fig. 1.F

Both striated and smooth muscles are found in the skin, the former being less abundant than latter. The striated or voluntary muscles of the skin are chiefly limited to the subcutaneous tissue and the deep seated muscles, and extend obliquely or vertically between the glands into the corium. Smooth or involuntary muscles of the skin are very numerous and are found in corium occupying horizontal and oblique positions in relation to the surface. The former run either in a straight or circular direction and are chiefly found in the scrotum, penis areola and nipples of the breast and eyelids. Contraction of these muscles forces the skin into folds and changes its external appearance.

Sebaceous glands are first noted in the third or fourth month of fetal life, appearing as buddings from the external root sheath of the hair-follicle. These projections consist of epithelial cells which by multiplication and further downward growth, from the gland. They are richly supplied with blood vessels, being surrounded by a net work of capillaries they appear first in the skin of the eyebrows and forehead, like the hairs, then spread over the trunk, finally reaching the extremities. Structurally sebaceous glands consist of the secretory portion and the duct which empties between the surface of the hair and its inner root sheath.

Hairs are elongated, cylindric, horny formations derived from the epidermis and are obliquely planted in depressions in the corium known as hair-follicles or hair-sacs. Ordinarily one hair only occupies each hair-follicles. Hairs of some degree, no matter how minute, are found on all body surfaces excepts the palms, soles, dorsum of the distal phalanges of the hands and feet, lips, glans, penis and inner surface of the prepuce. They may be divided into three classes.

1. The fine downy or lanugo hairs found upon the general surface.
2. Short, strong and bristly hairs such as the eye brows or eye-lashes and those in the nerves and outer auditory canal.
3. The long softer hair of the scalp, beared and genital regions. Hairs vary in different individuals, nationalities and Types, due mainly to the degree of straightness or curl, caliber, length or colour.

The colour of the hair is due to varying amount of pigment granules and diffused pigment present in the cortical and medullary portions of the hair and to the

presence of air, usually in the form of air vesicles. The latter element plays an important part in the physiology of white, grey and blond hair. The degree of pigmentation usually corresponds with that of other parts of the skin. It varies widely in different races and Individuals and sometimes in the same person under changed state of nutrition caused by rapidly or slowly acting influences on the trophie nerves.

The hair bulb or root of the hair embrances the papilla and is in turn surrounded by the hair follicle. It is composed of three structures, the cuticle, the cortex, and the medulla. The shaft of the hair extends from the place of cutaneous exit of its free wotremity. When uncut and healthy. The latter always ends in an acuminate point, well Illustrated in the hairs of normal eyelids. The hairs papilla is composed of a delicate fibrous or myxomateous connective tissue, freely supplied with pigmented and non-pigmented connective tissue corpuscles and a variable number of blood vessels.

Human hair is fascinating for it adds so much to one's attractive looks and charming personality. Different people have different kinds of hair. It can be coarse medium, curly, wavy, limp, silky, straight, dry, thick or thin. A part of each hair roots below the surface of the skin. This part lies in a bag-like structure called follicle. The end of the hair called bulb is the only living part of the hair. Normally ninety percent of the hair on your head grow at one time. The length of hair depends on the length of the growing phase of the follicle. The most conducive period of hair growth in women is between fifteen and forty years, when they produce maximum estrogen. The hair color of an individual is set at birth. It is inherited and influenced by a pigment called melanin. The darker one's hair is, the more melanin it contains. When the hair will turn grey depends mostly on one's genes and how much melanin one's body

makes. The shape of one's hair follicles influence the shape of hair. Straight hair usually grows from a round hair shaft, the wavy hair grows from an oval shaft and the curly hair grows from a flat shaft. Changes occur in the growth and shape of the hair with age. At puberty, terminal hair gradually replaces values, starting in the pubic regions. In both boys and girls, the first pubic hair is sparse, long downy, slightly pigmented and almost straight. It later becomes darker, coarse, more curled and extends in area to form an inverse triangle. Axillary hair first appears about two years after the start of pubic hair growth. Facial hair in boys first appears at about the same time as the axillary hair, starting at the corners of the upper lip, and spreading medially to complete the moustache and then the cheeks and beard. Terminal hair development is continued in regular sequence on the legs, thighs, forearms, abdomen, buttocks, back arms and shoulders. The patterns of distribution of terminal hair on the neck, chest, back and limbs vary from individual to individual. The extent of terminal hair tends to increase throughout. The years of sexual maturity but most patterns occur over a wide age range certain follicles of the scalp may regress with age produce only fine, short vellus hair. Growth of hair which in any given site is coarser, longer or more profuse than is normal for the age, sex and race of the Individual is regarded as excessive growth of hair. On phylogenetic grounds and on the basis of its specific and organic induction, the growth in the female of coarse terminal hair in the male adult sexual pattern can be differentiated. Graying of hair (canities) is an important part of Hair culture. Greying of Hair (Fig. 1.E) is usually a manifestation of the ageing process and is due to a progressive reduction in melanocyte function. The larger medullary spaces of older people contribute to the process. There is a gradual dilution of pigment in

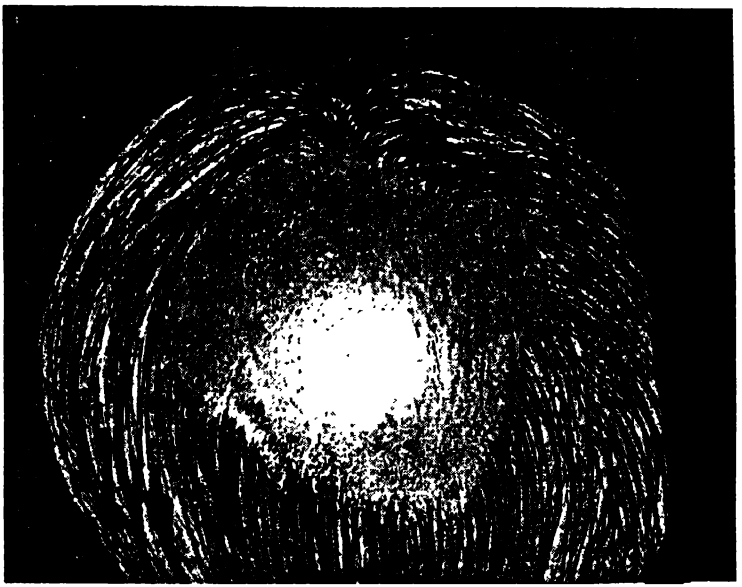


Fig. 1.G



Fig. 1.C(a)

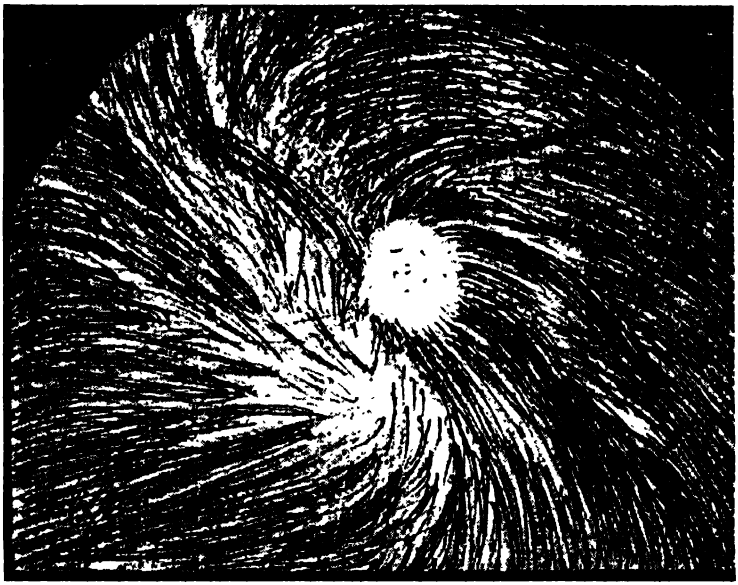


Fig. 1.H



Fig. 1.I



Fig. 1.J



Fig. 1.K

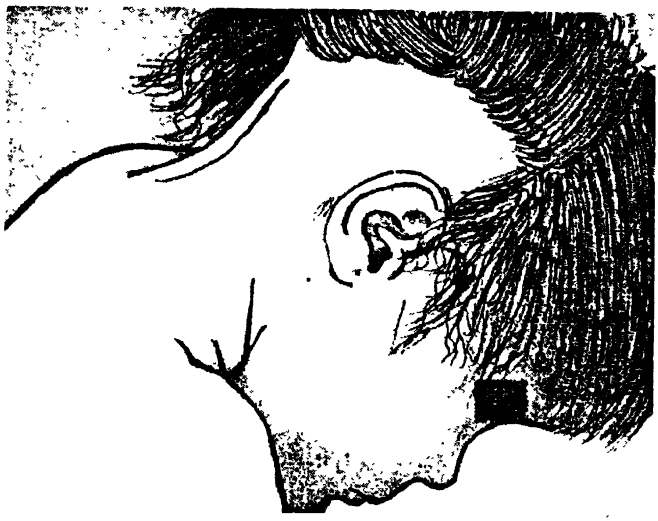


Fig. 1.KZ

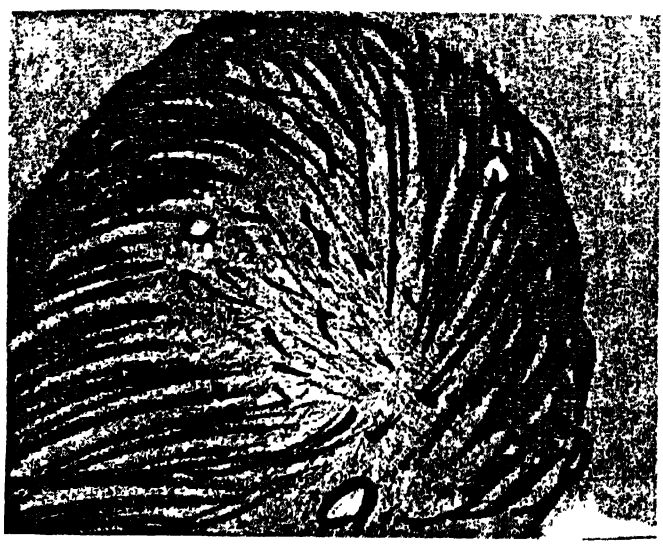


Fig. 1.S

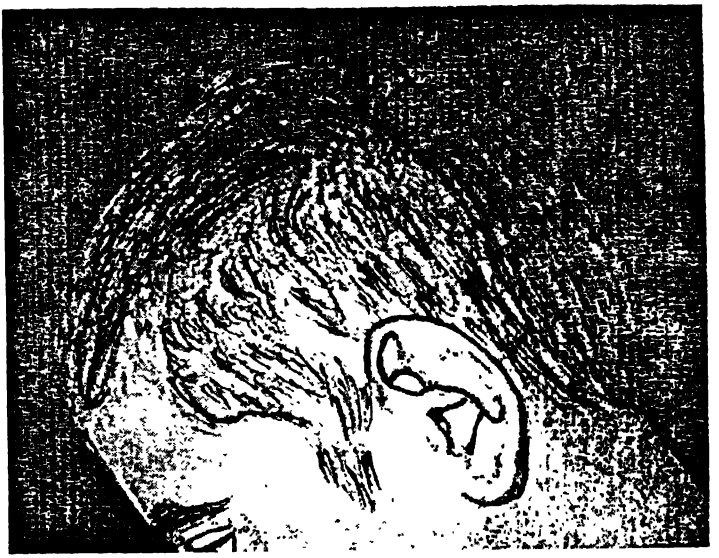


Fig. 1.L



Fig. 1.M

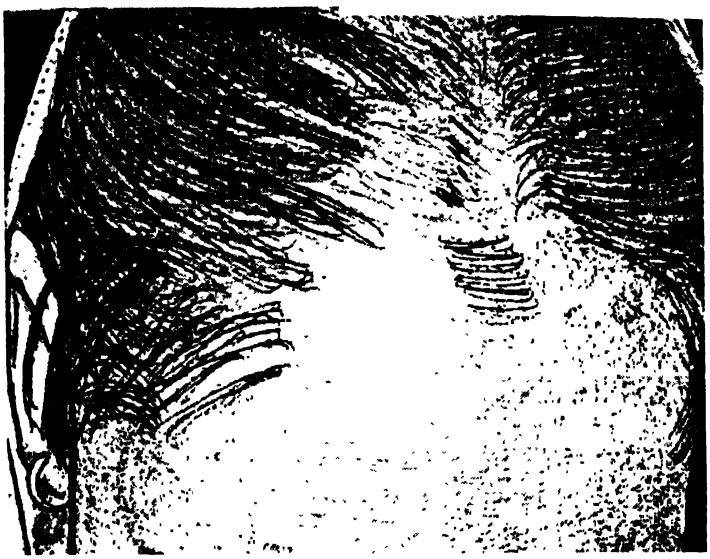


Fig. 1.N



Fig. 1.O



Fig. 1.P



Fig. 1.Q

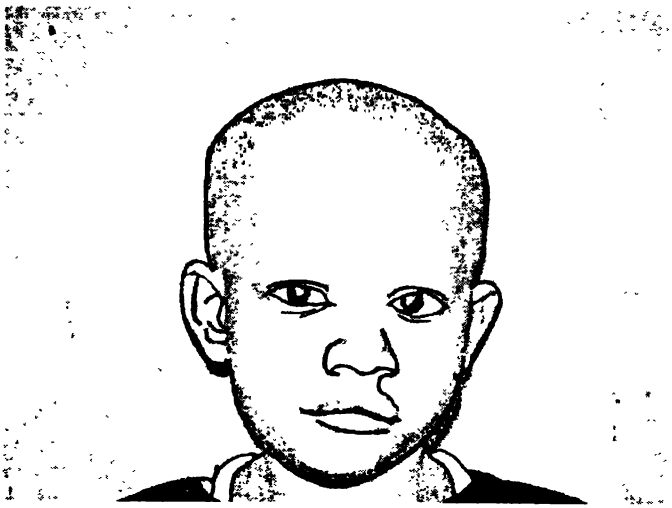


Fig. 1.R



Fig. 1.R.I



Fig. 1.R.Q

greying hairs i.e., the full range of colour from normal to white can be both along individual hairs and from hair to hair. Loss of hair shaft colour is associated with decrease and eventual cessation of tyrosinase activity in the lower bulb. In white hairs melanocytes are absent or dormant. It has been established that autoimmunity plays a part in the pathogenesis of greying. Grey hair certainly has an association with the autoimmune disease pernicious anaemia. The age of on set of canities is primarily dependent on the genotype of the individual. The beard and moustache areas commonly become grey before scalp or body hair. On the scalp the temples usually show greying first, followed by a wave of greyness spreading to the crown and later to the occipital area. The probably mechanism for rapid greying is the selective shedding of pigmented hairs in diffuse Alopecia areata, the non-pigmented hairs being retained.

Premature greying (Fig. 1.F). Premature greying of hair implies onset of greying before 20 years of age. It probably has a genetic basis and occasionally occurs as an isolated autosomal dominant condition. The association between premature greying and certain organ-specific autoimmune diseases can be the cause. The relationship is probably not one of common pathogenesis but on the basis of genetic linkage. It is often thought that premature greying may be an early sign of anaemia, hyperthyroidism. The premature ageing syndromes, progeria and werner's syndrome (Pangeria) may have very early greying as a prominent feature.

Sycosis vulgaris is a chronic inflammatory disease of the hair-follicle usually involving the beard and mustache, due to microbic infection and characterised by the presence of papules, pustules and nodules perforated by hairs. This disease can occur on the eye-brows, neck and pubic regions of either sex. It is usually milder when it occurs. If untreated and gradually involves new follicles until the whole bearded region is affected but it never extends to the non-hairy parts of the face. Heterochromia is a term which means the growth of hair of two distinct colours in the same individual. A colour difference between scalp and moustackle is not uncommon. In fair haired individuals, pubic and axillary hair, eyebrows and eye lashes are darker than scalp-hair.

2

Alopecia (Baldness) and Its Varieties

Alopecia implies loss of hair, partial or general, varying from a mere thinning to complete baldness. The different varieties of Alopecia with different causes are:-

1. Alopecia Areata (Fig.G-GA):- It is a disease that affects the scalp and there is sudden patchy loss of hair. The cause of Alopecia is not known but it may be caused by Ionizing radiation, ring worm, severe shingles, stress, chemical permitting, and a change in hormone levels. Some doctors believe Alopecia areata is an autoimmune disease which the Immune system attacks the hair follicles as if they were foreign cells. The disease may be linked to the oral contraceptive pill as this blocks the body's natural progesterone and replaces it with artificial form.

Alopecia Areta is a condition of the hairy surface, characterised by one or more circumscribed rounded areas of complete baldness without any apparent change in the skin. The symptoms of this disease are occasional moderate itching and one or more, small, round, smooth white spots entirely denuded of hair. The skin is apparently sound and the lesions are irregularly distributed and commonly located on the scalp. The male beard or the eyebrow, (Fig-j) axillae, pubes or even the downy surfaces in either sex may be involved. Generally the patches remain stationary but sometimes

they increase by peripheral extension. This methods of growth are characteristic of true alopecia areata. Rarely the condition is more pronounced at one or more sections of the periphery, forming singles or multiple Zig Zag extension in several directions. The patches involved appear polished, thin, and somewhat depressed sensitiveness to irritants is diminished to a marked degree. Short hairs which can be removed by the slightest traction are noted at the spreading patch and occasionally some of the longer hairs come out easily. When the lesion becomes stationary, the short hairs no longer appear, the longer hairs are not so easily pulled out and recovery ensues. In most of the cases the hair appears all over the patch at once. The new hair is fine, of lighter colour, sometimes even white and frequently falls out to remain absent for a variable period before its renewal. This performance of shedding may be repeated a number of times before the hair becomes permanent. This type of Alopecia can take another form, small size patches which remain white and resemble scar tissue.

2. Alopecia Congenita:- (Fig-H) Congenital alopecia is uncommon, nearly temporary in which the hair loss may be general or in circumscribed areas. It may be scanty or retarded in its growth or simply downy in character it is usually caused by a delay in the development of the hair and may be associated with defective growth of teeth, nails and other structures usually the hair grows after an interval of weeks, months or years.

3. Alopecia Premature:- (Fig-I) Premature baldness or loss of hair may be idiopathic or symptomatic. The Idiopathic variety may begin at any age but rarely before the thirtieth without any known cause beyond Heredity and usually occurs in men. It is noted as an increase of the normal shedding of the hair. The hair line at the sides of the forehead. (Fig. -1.I) may gradually recede

sparing a central crest for sometime and forming an arched forehead or the entire forehead line may recede, presenting the high forehead or the hair may become thin over the whole crown simultaneously, or it may extend from the vertex forward. No matter what the preliminary process, the resulting baldness is usually symmetrical. There may be a temporarily increased hair growth. If left untreated, progressive gradual thinning of the hair ensues. In symptomatic premature alopecia, the baldness can be temporary or permanent, depending upon the nature and the local or general causes, but it always has a recognizable cause. Permanent loss of hair may result from the local lesions of lupus, scleroderma, syphilis and folliculitis. Sometimes temporary baldness may come localized eczema, psoriasis, parasitic affection, or superficial local injuries. Sometimes loss of hair may occur following acute fevers, such as typhoid small box, diabetes, leprosy, mental anxiety or nervous shocks. It is interesting to note that loss of hair often occurs during convalescence rather than during the course of the disease. In most of such cases the baldness is temporary and often presents a thinning of the other hairy parts as well as the scalp. The shedding of the hair may be rapid or slow.

4. Alopecia Senilis:- Senile baldness is usually a part of the general atrophic changes incident to old age, but no exact period of life can be set as the proper time for its occurrence because years do not measure the age of tissues. Much the same causes and conditions which produce premature Alopecia may operate at the senile period, although true senile baldness is seldom seen before the fortieth year, usually affecting the scalp, it often begins at the vertex and spreads forward and backward until the whole crown is symmetrically affected. It may appear as a general thinning of the whole scalp, sometimes it may begin at the brow as in

premature alopecia and show its advance by a receding forehead. The hair on the posterior and lateral regions is often retained, owing to the greater thickness of the scalp at these parts and its more constant exposure to light and air.

5. There is another kind of Alopecia called Traction Alopecia (Fig. K). In this type of disease thinning and loss of hair appear over the front parietal area of the scalp. This kind of hair loss is due to traction this type of disease generally appear in rural girls having inadequate hygienic facilities. Some times water and soap can be the cause of this disease.

6. Trichotillomania:- (Fig-L). By Trichotillomania is meant a compulsive habit which induces an individual to pluck his or her own hair repeatedly. Trichotillomania occurs more than twice as frequently in females as in males. It is frequent in children than adults. The child develops the habit of twisting hair round its fingers and pulling it. This habit may replace the habit of thumb sucking. In initiating this habit emotional deprivation in the maternal relationship is considered important. The rare and severe form occurs predominantly in females of any age from early adolescent onwards. The hair pulling begins in a provocative social situation in an individual who is often greatly disturbed psychosocially or emotionally. In the younger patients the hair pulling develops gradually and unconsciously. Hair is plucked most frequently from one frontoparietal region. There results an ill-defined on which the hairs are twisted and broken at various distances from the normal scalp. In the more severe form the patient usually denies that she is touching her hair. The hair plucking may be continued for years and the disfiguring baldness is held by the patient to be responsible for her psychological problems. Much more unusual is the habit

of plucking the eye lashes, eyebrows and beard. In some rare cases the patient may pluck hair from other regions of the body such as the more pubic and perineal region. The child may also suck and even eat the hair.

7. Cicatrical Alopecia (Fig, M). Cicatrical alopecia is the generic term applied to alopecia which accompanies or follows the destruction of hair follicles, whether by disease affecting the follicles or by some process external to them. The follicles may be absent as the result of a developmental defect or may be injured by trauma as the burns or radiodermatitis. They may be destroyed by spedici infection---fevers, tuberculosis, or syphilis or by some malignant tumour. In some cases, their destruction can be attributed to a disease such as lichen planus (Fig.N).

8. Pseudopelade (Fig-O):- The term pseudopelade implies a slowly progressive cicatricial Alopecia with no inflammation majority of the dermatologists believe that 90% cases of pseudopelade are caused by lichen planus. However some patients with pseudopelade never show any clinical evidence of lichen planus. Pseudopelade is there fore generally regarded as a clinical syndrome which may be the end result of any one of a number of different pathological process known and unknown. Although both sexes may be affected and the condition has occurred in childhood. The patient is usually a women of 40 years of age. She may complain of slight irritation at first but more often a small patch is the first evidence of the disease. The initial patch is more often on the vertex but may occur anywhere on the scalp.

9. Woolly hair (Fig-P):- The wooly hair is more or less tightly coiled hair occurring over the entire scalp or part of it. It can be classified into:-

a. Hereditary woolly hair:- The inheritance of this disorder is determined by an autosomal dominant gene.

In some pedigrees the shaft diameter in affected individuals is reduced and the hair is fragile and may show trichorrhexis nodosa. Excessively curly hair is evident at birth or in early is evident at birth or in early infancy. The hair shaft may be twisted, in some cases the hair is brittle and breaks readily.

b. Familial woolly hair:- There is a marked reduction in the diameter of hair shafts which may be poorly pigmented. The hair is brittle and there are signs of wear and tear.

c. Symmetrical circums cribed allotrichia:- The woolly hair are called whisker hair also but which are Identitical with symmetrical circumscribed allotrichia. It generally appears from adolescence onwards. The hair in an irregular band extends around the edge of the scalp from above the ears towards the occipital region, becomes coarse and whisker like. Some people believe that whisher hair is synonymous with acquired progressive kinking.

d. Woolly hair naevus:- The hair in a circumscribed area of the scalp is tightly curled from birth to infancy. The size of the affected areas usually increases only proportionately with general growth. The abnormal hair may be slightly paler in colour than that of the rest of the scalp. In many cases a pigmented or epidermal naevus has been present but not in the same site. A woolly hair naevus has been associated also with ocular defects.

e. Acquired progressive kinking of the hair appears to be extremely rare. It is probably synonymous with whisker hair. But some cases have been confused with the woolly hair naevus. It generally appears in adolescence or adult life. The patient gradually becomes aware that the hair in one region of the scalp is becoming kinky and that a progressive change in texture is

occurring. The hair on one or more regions of the scalp is wiry, kinky, dry and lusterless.

10. Trichoptilosis:- It is a condition of the splitting of the shaft of the hair, giving it a feathery appearance. The term Trichoptrosis implies longitudinal splitting of hair shaft. The patient often refers to the condition as splitends. Trichoptilosis is the commonest microscopic response of the hair shaft to the cumulative effects of the chemical and physical trauma. It can readily be produced by vigorous brushing of normal hair, and it occurs in the nodes of the pilitorti. Trichoptilosis is often an incidental finding in a woman who complains that her hair is dry and brittle.

There are other hair disorders which can be simple or complicated and which can take the shape of serious disease. There is Hirsutism (hypertrichosis) which implies excessive hair growth over the upper lips and chin (Fig-Q). The specific cause of this disease is unknown. Sometimes unhygienic water and malnutrition is attributed the main cause of this disease. This disease generally occurs in the elderly women. Alopecia totalis means complete baldness (Fig-R). This type of alopecia generally occurs after birth and heredity can be the major cause of this type of alopecia and Radiation alopecia (fig-RQ). This type of alopecia followed radiation for the treatment of an interenial space occupying lesion and physiological alopecia (Fig-S). In this type of alopecia defuse hair loss is common following delivery. A similar condition may be observed after severe stress of any origin.

3

Causes of Alopecia and Hair Disorders

Heredity Exists in about fifty percent of all cases of idiopathic premature alopecia. Women are less affected with baldness than men because of the greater abundance of fat in their scalps. The daily application of water to the scalp which is so common among men contributes to Alopecia. It is well known that brain workers and intellectual people in general are more often applicated. City life, lack of exercise, excessive meat diet, gout and heredity are all predisposing causes. Even in alopecia congenita, Heredity is the only known factor because the condition has been frequently observed in brothers and sisters and occasionally in their parents. Heredity may be a factor in premature conities and is probably a constant influence in the congenital form. Structural defects of the hair shaft may be sufficient in degree to cause. Significant cosmetic disability or they may render the hair abnormally susceptible to injury by minor degrees of trauma (Excessive weathering). They may also be the result of heredity or acquired metabolic disorders. The heredity nature of monilethrix has been established after the abnormalities of hair shaft were Identified.

There are varieties of alopecia of nutritional and metabolic origin. Hair is affected early in protein deficiency. Since protein is conserved for more essential

purposes. Malnutrition influences the structure of the hair shaft and sometimes the colour of the hair shaft and sometimes the colour of the hair protein deprivation causes atrophy of the bulb and loss of internal and external roots sheaths but no changes in the anagen-tologen ratio. Moreover (withering of hair) especially in young children is most commonly due to prolonged dietary deficiency of protein and calories. The hair appears to be fine and dry, the diameter of the hair bulbs is reduced to a third of normal and almost all follicles are in tologen. Iron deficiency is occasionally associated with diffuse alopecia, even in the absence of anaemia zinc deficiency resulting from a failure in absorption gives rise to alopecia. Zinc deficiency may result from prolonged parenteral elimination with erythema and hair loss. Jhallinum salts are no longer used in many countries for the depilation of the scalp infected with ringworm. In many countries they are still used as pesticides. Thallium is rapidly taken up by anagen follicles and disturbs keratinization. Many hairs break within the follicle, irregularity of the dark keratogenous zone and air bubbles within the shaft near the tapered tip give a distinctive appearance. The loss of hair begins after ten days as diffuse shedding of abnormal anagen hairs. It amy rapidly become complete of with lower doze may be followed by the gradual shedding of club hairs over a period of 3 to 4 months. In severe cases of severe poisoning, death may result from acute cerebral and renel damage before hair loss can occur. There are many varieties of alopecia which are caused by chemicals. Some patients with thyrotoxicosis treated with thiouracil or carbimazole develop a diffuse alopecia. All the anticoagulant drugs are likely to induce alopecia. Coumarin such as warfarin are widely used as rodent poisons and are sometimes accidently injested by children. The highest dose, and not the duration of the

exposure, determines the degree of hair loss. Apparently normal club hairs are shed some three months after the effective blood level is achieved. There is often moderately increased shedding without obvious alopecia, but with high dosage, moderate or severe alopecia may occur. Many cytostatic agents employed therapeutically or given with criminal intent can cause hair loss. Excessive consumption of vitamin A gives rise to a variable syndrome in which the main features are dryness, irritability and sometimes pigmentation of the skin and slowly progressive thinning of scalp and body hair, eye brows and eye lashes, loss of weight, fatigue and bone pain. There are reported cases in which occupational exposure to sodium borate has caused diffuse alopecia. Boric acid mouthwashes have caused a similar pattern of hair loss. There are some other chemicals which can cause alopecia. Reversible alopecia is occasionally induced by potassium thioeynanate formerly prescribed for hypertension trimethadione used in the control of epilepsy. Other drugs which can induce hair loss include lithium carbonate, dixarazine and etretinate. Even propranolol and cimietidine after several months of administration have been suspected of causing diffuse alopecia.

Human hair is greatly affected by thyroid hormones. The proportion of roots in telogen has been recorded to be abnormally high in hairs plucked from the occipital and parietal areas of hypothyroid subjects. The phenomenon of postpartum hair loss appears to result from a harmonally mediated change in the cycles of scalp follicles. A loss of hairs gives rise to a transient alopecia about five months after parturition. The passage of follicles into catagen followed by shedding of club hairs are slowed down by pregnancy. In pituitary deficiency beginning after puberty, the scalp hair becomes very thin and pubic and axillary hair is totally

lost. The skin is yellowish and dry and lacks turgidity. Sometimes in poorly controlled diabetes, diffuse alopecia occurs.

Sometimes alopecia occurs due to some central nervous system disorder. Total and permanent alopecia has accompanied the lesions of the mid brain and brainstem. Temporary diffuse alopecia may follow head injuries particularly in children.

Evil stress is becoming part and parcel of our life. Be it a house wife, a working woman, a professional a government employee, a business executive---all are feeling the impact of stress. In Indian society the family pattern is undergoing a great change. Families and social ethos that provided the individual emotional anchor are fast disappearing. The spectre of stress has been the cause of many psycho-physical ailments. A certain amount of stress is needed and some degree of tension is necessary for students to prepare for examinations. But if the stress crosses the optimal level, it will disturb the entire system. There are three cardinal psychodynamic considerations in stress.

1. A deep sense loss of what is loved or valued. Which may be a person, a thing or liberty.

2. A conflict of mixed feelings of love and hatred toward what is loved or highly valued.

3. A heightened over critical concern with the self.

Stress may be an important precipitating factor in some cases of alopecia areata. Psychological factors and family situation that may have affected the onset of the disease.

4

Yoga—Meaning and Relevance

Yoga is a subjective science which deals with all aspects of man, body, mind, emotions, psychic faculties in an integrated manner. Yoga removes mental and physical ailments and diseases.

The word "Yoga" has been by and large misunderstood. Some look upon it as a particular type of exercise whereas others call it a mode of meditation, still others have called it the science of man. In every definition of the meaningful term, one or the other aspect of this science and art is highlighted. Infect perfection and control of both the body and the mind and as a process leads man from the ignoble to the noble finally culminating in the realisation of the serf as the absolute. We should lay emphasis, on integrated type of yoga that should include yogic exercises, breath holding practices and meditation. It is universal in its application and hence all embracing and all pervasive. It covers all the conceivable aspects of human life that lead to physical fitness, mental harmony and spiritual consciousness.

Man is a unique creature of God. He has many levels of existence. Besides having a physical body, he is blessed with a self that is the real centre of his whole being. The Taittriya upanished has rightly spoken of food self, prana-self, self of knowledge and self of bliss. Every self is a kind of concentration of consciousness and this

consciousness is divine at its core. Yoga can play a vital part in this remarkable discovery of the self. It is self-awareness that gives a push forward to all our limbs and faculties. The growth in evolution is measured by the development in consciousness. In man, particularly, the main purpose of culture is to develop his consciousness more and more. The Integral yoga of Sri Aurobindo, with its wider sweep, attempts to expand the consciousness to its utmost height. The first object of this yoga is to increase the quantum of self awareness, to acquire more and more control over the movements of all the faculties and limbs.

The ultimate aim of human life is to attain perfection and state of supreme blessedness. Who does not want to overcome sorrow and suffering ? Who does not want to attain a state of profound serenity and peace away from stress and strain ? Among other things, yoga lays emphasis on self-discipline. Human body is the field in which we have to work. Self discipline or self-management of the body is absolutely essential for the practice of yoga. Yoga is panacea for stress disorders. It works wonderfully where innumerable tranquilising agents have failed miserably. Various yogic practices not only help in removing these diseases but also improve the resistance of the body at the psychological state. Scientific studies have shown that yogic practices can delay ageing and degenerating process with the result that a person may remain active and energetic for a longer period of life. What we need more than anything today is the harmonious outlook. A synthesis of our understanding of external world as per modern science and technology and the study of internal world of man is the need of the hour.

Patanjali, the great sage has defined yoga in three words "Citta, Vritti-Nirodhah". The ideas underlying all three words in this sutra are of a fundamental nature.

The word "Yoga has various meanings. It is derived from the word "Yuj" which means to join, to link or to connect. According to Hindu philosophy the human soul or "Jivatma" is partial expression of Parmatma, the Divine Reality. This state of unification of the two in consciousness as well as the mental process or discipline through which this union is attained are both called yoga. Then comes the word "Citta" which is at the basis and through which Jivatma materialises. Broadly speaking citta corresponds to "Mind" of modern psychology. Then comes the word "Vriti". It is derived from the word VRT. Which means to exist. Vritti is a way of existing. The last word is "Nirodha" which implies restraint or controlled. All these connotations are applicable in different stages of yoga. Restraint is involved in the Initial stage, control in the advance stage and inhibition in the last stage. Patanjali's system of yoga called Ashtang yoga has eight parts. The following sutra enumerates the eight constituent parts of this system:-

"Yama - niyamaasana asana, pranayama, pratyhara dharna-dyana-samadhi strangni".

Yama and Niyama, the first two steps of yoga are meant to provide an adequate moral foundation for the yogic training. The main object of this ethical code is to eliminate all mental and emotional disturbances which characterise the life of an ordinary human being. Hatred, dishonesty, deception, sensuality, violence, Greed are some of the common vices of the human race. As long as these vices haunt human mind, it is useless to take the practices of yoga. Pranayama which is the exercise of breath control is of paramount importance in yoga. Prana and mind are inseparably bound up with each other. "Prana which exists on all the planes of manifestation is the connecting link between matter and energy on the one hand and consciousness and mind on the other". Pranayama is utilised for preparing the

mind for Dharna, Dhyana and samadhi. Pranayma is not only regulating of prana and prana is not the breath but the vital force which keeps up the activities of the physical body. The vehicle of prana is not the physical body but the panayama kosa. The importance and uses of asana and pranayama have been discussed in separate chapters.

According to yoga, all diseases originate from an unhealthy state of mind. The western psychologists also corroborate this fact. They are of the view that diseases of the body are attributed to Hatred anger, worry, jealousy and depression etc. Some people in the west have started calling a drug "Ecstasy" "Heaven" "Sublime". But that is against all laws of yoga. Real "Ecstasy" or "Heaven" is not in outside word. It flows in the very juices of one's life. The real heaven is inside the man and yoga is a great permanent sedative. Man has the source of the infinite ecstasy within him. Every outer drink will make one unconscious and addicted. One will need more and more of it, because his body will become immune to it. Drugs can give certain experience is and that is the problem. To have an experience is not the basic thing, to grow through it is the basic thing. One can have experience through drugs but one cannot grow. The experience through drugs is almost abortive. The real thing is growth and integration. And stimulation from the outside is in the long run harmful and dangerous. Huxley has been regarded as high priest of drug culture. He says "all the existing drugs are treacherous and harmful. The heaven into which they usher their victims soon turned into a hell of sickness and moral degration. They kill first the soul, then in a few years the body. Yoga is secular, whosoever wants to free himself from the din and noise trials and tribulations, stresses and strains, fear psychosis must come to the refuge of yoga----- the only choice before mankind.

5

Asanas

Asana means a posture, a seat in which one can sit comfortably for a long time. Asana should be effortless. There should be no effort not only in the body but also in the mind. Absolute ease of relaxation is the sign of perfected Asana. The practitioner should be in most natural condition. There are lakhs of Asans given by ancient Indian Rishis. The purpose of yoga-asanas is integrated development of the personality i.e., physical, mental and spiritual. Many people wrongly consider Asana as gymnastic exercise or body building technique. If the gymnastic exercises constitute yogasanas then every circus clown and acrobat would be a yogi. Physical exercises or gymnastic exercise have only a physical effect on the muscles and bones. No doubt, the gymnastic exercises develop large muscles require more nutrition and greater supply of blood which puts greater strain on heart and respiratory systems. After doing these exercises a person may feel healthy, but as he grows old the body functions slow down and the problems of stiffness and rheumatism occur. The over developed muscles become flabby Gymnastic and weight lifting do not provide the relaxation which is necessary after doing physical exercises yogasanas are performed very slowly steadily with ease and deep concentration. Yogasans are effective and useful for both internal and external system of body. With the help of yogasans, the nervous system, endocrinal glands internal organs as well as muscles function properly. Asana have physical and

psychosmatic effect. They can be done by all, young and old, men and women.

Benefits of Asanas

1. Regular practice of asanas is highly beneficial for the purification of veins and nerves and promotion of sound mind and sound body. Asanas are of two types i.e., static and dynamic.

2. Asanas help in mental, physical and spiritual development. There is no age or sex bar in doing asanas. The regular practice of asanas improves the main systems namely digestive system, circulatory system, respiratory system and nervous system.

3. Asanas make the body supple and flexible. Asanas keep the body healthy and free from diseases.

4. The regular practice of asanas increases the power of concentration equilibrium and vitality.

5. The spinal cord is called the tree of life. The branches and leaves are the remifications of the nervous system which spread to the near and distant parts of the body. The functions of the nervous system depend upon the spinal cord. With the advancement of age, the vertebrae and joints become stiff or rigid particularly when no exercise is done. Asanas keep the spinal cord supple and flexible.

6. Asanas help in the awakening of all dormant powers. The bending and stretching postures, the proper functioning of the abdominal muscles, the purification of the blood resulting from the expansion of lungs, toning up of the muscles, all give vigour, vim and vitality to the mind and body.

7. The waste matter accumulated in our body is eliminated by yogasanas. As the age of a person increases, several organs of the body become weak or

even damaged. The consequent accumulation of chalk-like cholesterol or other impurities in the muscles, the veins and arteries harden and narrow thus making the circulation of blood slow and Irregular. Some diseases are therefore caused by improper elimination of waste matter, such as urine and stool from the body.

8. Asanas rejuvenate and tone up the different glands of the body. These healthy glands produce required secretion which help proper growth of the body.

9. Physical ailment and diseases like Arthritis, Abdominal disorders, Diabetes, Heart ailments, Hypertension, Respiratory problems, Migraine, Backaches, Asthma. Hair Disorders can be prevented and cured by Asanas.

10. People doing mental work can increase their thinking power and can have calm and clear mind by doing certain specific Asanas namely Vajrasasna, Padmasana, Siddhasana, Naukasana, Shirshasana, Gomukh asana, Jeystikaasan, Advasana and Shavasana.

Modern man wants luxurious unnatural and wrong way of living. He thinks that for "every Ill" there is a "Pill". By doing asanas modern man will be able to free himself from ailments and diseases which appear due to wrong way of living. Our youngmen and women have turned to the use of drugs, LSD, charas, ganja, hashish, hormone and other transquilisers. Yoga in totality including asanas, is the only remedy for those people to find new meaning as purpose of life.

Asanas and Concentration

In the science of yoga, concentration is of paramount importance. Without concentration our efforts will prove futile. During each asana it is important to know where to concentrate. The mode and centre of concentration varies from asana to asana. Once the adept is able to do

certain asana in a relaxed and automatic ease, then he must concentrate on breathing. Natural breathing must continue naturally and rhythmically. Finally the adept should concentrate on the asanas strategic points of action. Each asana produces assessed effects upon some part of the body. For example, the thyroid region is affected by sarvangasana and the solar plexus by Dhanurasana. The positive effect of an asana is diluted when there is lack of proper concentration at the proper part of the body. In doing asanas, evil thoughts and diffused concentration can produce negative effects. In order to get desired effects from asanas it is essential to know why, how and where to concentrate. Some people turn to yogasanas by chance and not by choice. This type of mental attitude cannot help in concentration which is required in every human activity. Observance of some basic things.

In order to get maximum benefits of asanas, it is necessary to perform them properly at the proper place and time. Asanas performed wrongly or after meals can do more harm than good to the practitioner. The following instructions should be strictly observed before doing Asanas:-

1. Use a soft folded carpet or blanket for doing asanas. Do your asanas in a well-ventilated, calm, clean and peaceful place. The air should be fresh in the open so that you can freely breathe fresh oxygen. A good smooth lawn or garden is preferable. The space should be pleasant, airy free from mosquitoes, flies, rats or smoky air.

2. Before doing asanas, the bladder and stomach should be empty. If you have problem of constipation, drink two or three glasses of salted water and then practise Tadaasana, kati chkrasana and Bhujasgasana. These asanas should relieve your constipation. These

asanas should be followed by Pawan Muktasana. Avoid using Laxative drugs.

3. The best time for doing asanas is between 5 or 6 AM. According to Hindu scriptures this time is known as Brahmamahurata. It is time most conductive for the higher practice of yoga.

4. Asanas should be done after pranayama and shavasana should be done last of all.

5. Concentration is of utmost importance in Asana, while doing asanas talking should be avoided. Your attention and concentration should be on your breath and on the particular organ or part of the body which is affected by a particular asana.

6. You should never give strain to your body while doing asanas. The beginners may find their bones rigid and muscles stiff. But after regular practice they will become supple and the body will also become flexible.

7. While doing asanas, breathing should be done through nostril keeping the mouth and eyes shut. In simhasana alone breathing is done by mouth. Generally while doing asanas people do not take care of breath control.

8. Relaxation during and after yoga session is very essential relax your body as much as possible.

9. During asanas it is better to wear minimum lose, light and comfortable clothes according to the season. However, asanas can be done in the evening also if the stomach is empty.

10. A yoga practitioner should pay proper attention to the yogic diet which gives energy, vitality and vigour. The yogic diet is simple, light but nutritious. It is sattvic diet easily digestible. Light food keeps the body light and active.

11. Bathing makes the body light and fresh and increases its elasticity. Asanas should be done preferably after taking a bath.

12. People who have fractured bones and those who are suffering from Hypertension, Heart ailments, Tuberculosis, low blood pressure, Hernia, should not do the following asanas:-

Shirshasana, Sarvangasana, Mayur asana, Chakarasana, Dhanurasana, Yadtulasana, garbhasana, Bhujangasana.

13. Ladies during the menstruation period should not do any asana. They should do only shavasana which is best asana for rest and relaxation. moreover after three months of pregnancy no asana except shavasana should be done.

14. All asanas should not be done at the start. Asanas should be done according to one's capacity and duration of each asana should be increased gradually.

15. The sequence of asanas should be such that a particular asana is followed by counterpose. The counter pose of Paschimotasana is Yadulasana and that of Srvangasana is Matsyasana.

Regular and correct way of doing asanas will give vigour and vitality to your health, purity your veins and nerves, cheerfulness to your mind and a glow to your face.

Warm-up Exercises

Most of the books written on yogasanas are silent about warm-up-exercises. The importance and utility of warm-up exercises cannot be underestimated. The perfection in asanas can be attained when the joints have been loosened, muscles are toned up by stretching and by the Increased circulation of blood. Warm-up-exercise reduce the risk of muscular pull. Warm up exercises also reduce the stiffness in the muscles and joints. The following exercises must be done before doing yogasasns:-

Exercise No.1 (Arm Rotation)

Stand erect with feet apart, and the arms fully extended in line with the shoulders and palms up. Slowly turn the arms forward and backward so that the palms face first the front then behind, then upwards and downwards. Keep the body as upright as possible.

Exercise No. 2 (Side bend)

Stand erect with your feet apart and link your hands behind your neck. Keep your back straight. Bend to the left making sure that your arms are at level with your ears and your body does not lean forward and backward. Return to the starting position and repeat on your right side.

Exercise No. 3 (Chin-High Kicking)

Stand erect with your feet together and your arms stretched out in front of you at shoulder height. Kick forward and upward towards your hands. Repeat it ten times.

Exercise No. 4 (Stationary Running)

Stand erect with your hands on your waist. Run on the spot on your toes. It is beneficial to go as high as possible. Repeat it from 10 to 15 times. This exercise develop efficiency of heart and lungs.

Exercise No. 5 (Bicycling in air)

Lie down on your back with your arms by your side and your legs together. Keeping your back flat on the floor. Raise your right leg and then your left leg and rotate them as if you are pedalling a bicycle. Making sure that your knees come up at level with your hips, ankles and thighs. Repeat it 10 to 15 times.

Exercise No. 6 (Seated Expansion)

Sit on the floor with your legs straight and arms raised. Stretch your arms as high as you can and also stretch your legs forward. Try to keep your body upright. Repeat the stretching of arms upward from 10 to 15 times.

Exercise No. 7 (Head Contraction)

Sit in a comfortable cross-legged position with your back straight. Link your hands behind your head and push your hands against your head and forehead. Repeat it 10 to 15 times.

After doing warm up exercises, start following asanas. These asanas are highly beneficial for alopecia (Baldness) and Hair disorders and skin diseases.

1. Siddhasana (Adepts pose)

Comments

Siddha" in Sanskrit means adept. Yogis and rishis have spoken high of this asana. Great saints and sages like Nityamata, Niranajana, Kapali, Sabar used to meditate in this asana for hours together. The knees of the beginners may find it difficult to stay flat on the ground but by practice they can overcome this difficulty.

Technique

Sit on folded blanket on the floor, bend the left leg pull the foot in against the groin. Now bend the right leg



Fig. 5.1: Siddhasana

and bring the foot across and insert its outer edge in the crevice between the calf and thigh of the left leg. The right heel should press against the pubic bone and both the knees should firmly touch the floor. Keep the palms of the right and left hands on the right and left knees. Sit upright keeping the head and the back in a straight line. For variation change over the legs regularly. Place the heels near the groin carefully lest the public bone should be hurt.

2. Padam Asana (The Lotus Pose)

Comments

"Padamasana" is a unique pose for meditation, worship and prayer. It is held in high esteem by the yogis.



Fig. 5.2: Padmasana

It was the pose adopted by great Maharishi Patanjali. Lord Buddha and other great saints and sages like Sandilya, Gheranda, Matsyendra, Bharava and Swatmaran. It is called Padamasana after the famous flower (Lotus). This asana needs sufficient suppleness. Women and children can make a better attempt in doing this asana than men. Those suffering from stiffness of legs and knees and ankles will feel uncomfortable in this posture but regular practice will make them perfect.

Technique

Sit on the folded blanket with your legs outstretched, bend each leg and place each foot on the opposite thigh, soles turned upwards. Pull the foot as high as you can. Keep the palms of the right and left hand on the right and left knees, touching the thumbs with tips of index fingers and gaze at the tip of the nose. Keep the head, neck and spinal column straight and erect, and breathe slowly.

3. Sarvangasana (Shoulder Stand Pose

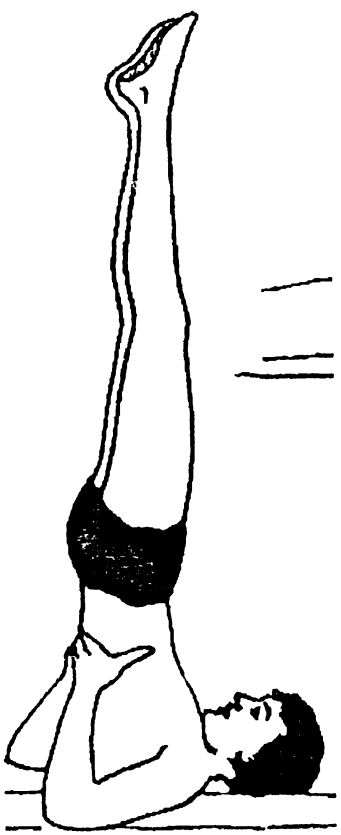


Fig. 5.3: Sarvangasana

Comments

In Sanskrit, "Sarva" means all or entire and Anga means limb or body. Sarvanga means the entire body or all the limbs. This is one of the most powerful and popular asanas. By practising this asana, all parts of the body are benefitted. In this asana, circulation is directed towards the thyroid and parathyroid glands which play vital role in the promotion of health. The malfunctioning of thyroid gland can harm all other glands. Within a few days of practising sarvangasans, one will be conscious of its invigorating influence on the whole body. To derive maximum benefit from this asana, Halasana should be practised after this asana.

Technique

Spread a blanket on the floor and lie flat on your back. Then slowly raise the legs up, lifting the trunk and hips vertically. The hips should be supported by both hands. Let the elbow rest on the floor. The chin should be firmly pressed against the chest. In this pose, the hind part of the neck should touch the floor and trunk and legs should remain straight. Remain in this pose for few minutes and breathe. Slowly and deeply and concentrate on the thyroid gland which is at the root of the neck. Return to the original position and relax.

4. Ardha-Matsyasana (The Fish Pose)

Comments

The Matsya means "fish" in Sanskrit. The name given to this asana appears to be strange because it does not bear any resemblance to fish. The Sanskrit texts give justification that this asana can allow one to float in water like fish. Matsyasana enables the centre of gravity more towards the middle of the body, allowing sufficient ventilation to the lungs and increases the capacity of the man to float. It is counter to sarvangasana and Halasana.

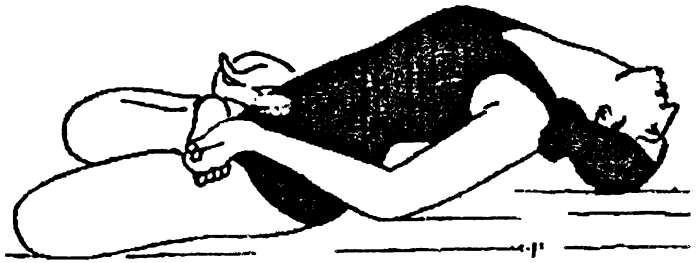


Fig. 5.4: Ardh-Matsyasana

Technique

Sit in the Padamasana posture. Lie back, keeping the locked legs down on the floor. Support the body with the hands and elbows. Lift the head and the shoulders and arch the back pressing the crown of the head on the floor forming a bridge in which the shoulders and back remain above the floor. Grasp the toes with both hands. Breathe deeply, expanding the rib cage fully. Remain in this pose for a couple of minutes. Return to the original pose and relax.

5. Hala Asana (The Plough Pose)

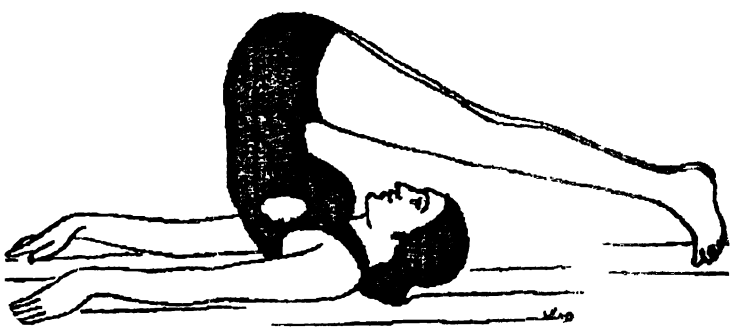


Fig. 5.5: Halasana

Comments

In Sanskrit "Hala" means "plough". This asana must be done after Sarvagasana. This pose is named so because it bears close resemblance to a plough (tool). It is one of the few Asanas named after a tool. It is a part and continuation of Sarvangasan. Different theories for the promotion of health have been evolved from this asana by the yoga theraupoists.

Technique

Spread a folded blanket on the floor and lie flat on the back with arms straight near the body, palms facing downward. Keeping the legs straight raise them slowly above the head. Only stomach abdominal muscles should be used to raise the legs. Bend the trunk upward hips first and slowly lower the legs over the head till the toes touch the floor. Keep the legs straight. Now interlock the fingers and stretch the arms. The legs and hands are stretched in opposite direction. Breathe slowly without any strain, remain in this pose for a couple of minutes and return to the original position and relax.

6. Suptvajarasana (The Spine Pelvis Pose)

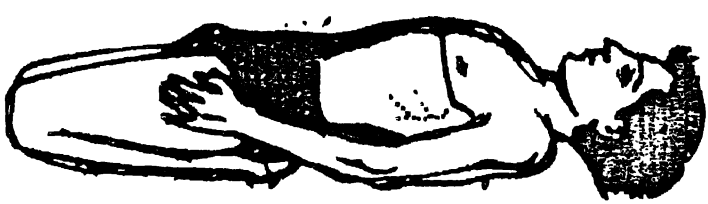


Fig. 5.6: Suptavajarasana

Comments

This is one of the most common and popular postures in Yoga. It is well known for many therapeutic benefits., and is held in high esteem by many modern yogis.

Technique

Sit on the folded blanket with buttocks on the floor between the heels in Vajrasana posture. Exhaling lean back slowly and lower the elbows to the floor. Support the trunk for a couple of seconds on the elbows and the forearms. Fold and lock the arms above the head, lie for a couple of seconds in this posture and breathe slowly and deeply. Then sit up again supporting on the elbow and feel relaxed.

7. Uthita Padmasan (The Weighting Scale Pose)

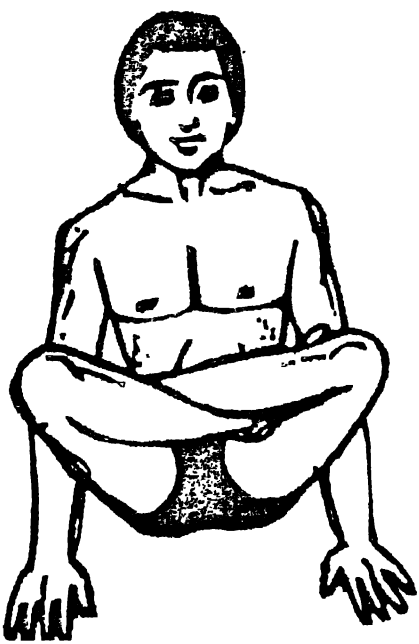


Fig. 5.7: Utthita Padmasana

Comments

It is one of the fine meditative asanas. It is performed from Padamasana and is highly efficacious for concentration and relaxation.

Technique

On a folded blanket, adopt Padamasana pose. Lie on the back and place the palms of the hands under buttocks and raise the trunk so that it is supported by the elbows. Then raise the head, legs and trunk further off the floor so that the whole body rests on the buttocks and forearms. Remain in this pose for as much time as you feel convenient. Breathe in and out slowly. Come to the original position and relax.

8. Shirshasan (The Head stand Pose)

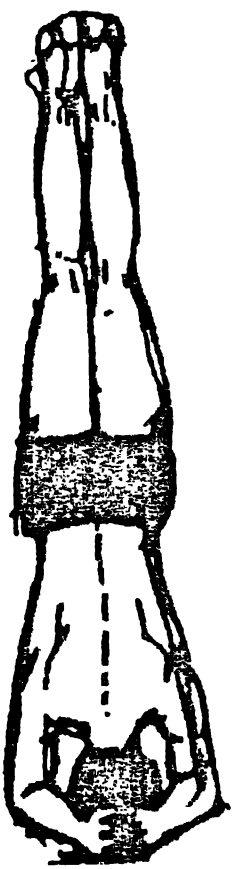


Fig. 5.8: Shirshaasan

Comments

In Sanskrit" Sirsha" means head. Shirshasan is the most important popular spectacular and extremely beneficial asana. It is called the king of asanas while some think of it as queen of the asanas. To a layman yoga means shirsahana and shirshasana means Yoga. In the west this asana is popularly known as "topsy-turvy" pose. To those who are ignorant, it seems madness to perform headstand and break their neck. Persons suffering from high blood pressure. A weak heart, sinus or ear infections, detachment to the retina, over weight thrombosis, vertigo, and blood impurities, should not attempt this asana.

Technique

On a folded blanket place a folded towel adopt vajrasasna pose. This asana is performed with the help of the hands and arms. The whole weight of the head, trunk and body is placed on the inter twined hands and elbows. Slowly move the legs towards the trunk and allow the knees to bend so that the back is upright and the thighs press against the abdomen and lower chest. Slowly transfer the body weight from the toes to the head and the arms and raise the other foot and balance on the head and arms Always breathe through the nose and never through the mouth. Lower the legs very slowly without any jerk to the floor to the original position. This will harmonise the blood circulation.

9. Badha Padamasana (Bound Louts Pose)-

Comments

Like padamasana, it is also recognised as the classic yoga pose. It is one of the basic but highly beneficial asanas and is in continuation with padmasana.

Technique

On a folded blanket, sit with both the legs stretched. Bend the right leg from the knee and place the right foot below right thigh. Raise up the trunk from the floor and

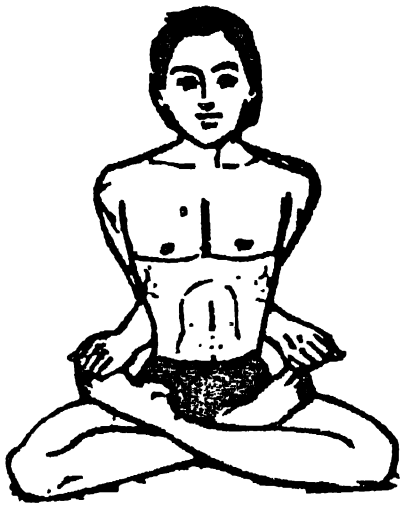


Fig. 5.9: Baddha Padmasana

place the right knee on the floor. Expand the chest with foot and the right knee. Raise the hands from the elbows and touch the palms with each other. Remain in this position for a couple of minutes and breathe slowly. Return to the original position and relax.

10. Marjaria Asana (The Cat Pose)

Comments

This asana is one of the simplest and can be performed by any one easily. This asana is also performed from vajrasana and can be extremely beneficial if the stomach is contracted during exhalation. Marjaria in Sanskrit means "a cat". This asana belongs to the energy block group of asanas.

Technique

On a folded blanket adopt the pose of vajrasana. Raise the buttocks and stand on the knees and at the same time place both hands flat on the floor in front of the body under the shoulders inhale and raise the head.

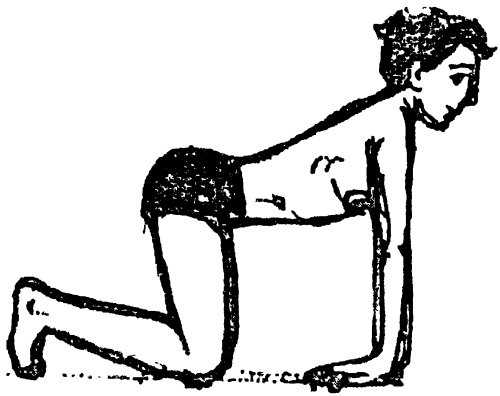


Fig 5.10: Marjaria Asan

Then exhale and lower the head and arch the spine. Again bend the spine and raise the head. The arms are to be kept straight and vertical.

11. Paschimot Asana (Stretching the back pose)



Fig. 5.11: Paschimottanasana

Comments

As the name suggests this asana stretches the entire rare portion of the body, jerky movement is to be avoided in this asana. This asana checks the Ageing process and is one of the powerful asana for spiritual awakening.

Technique

Lie flat on the blanket and stretch the arms over the head and breathe in slowly and normally. Raise the arms, head and trunk, exhale and bend them over the legs without raising the knees, catch hold of the toes with fingers, contracting the abdomen and gently pressing the head against the knees. Return to the original position and relax.

12. Bhujangasan (The Cobra Pose)

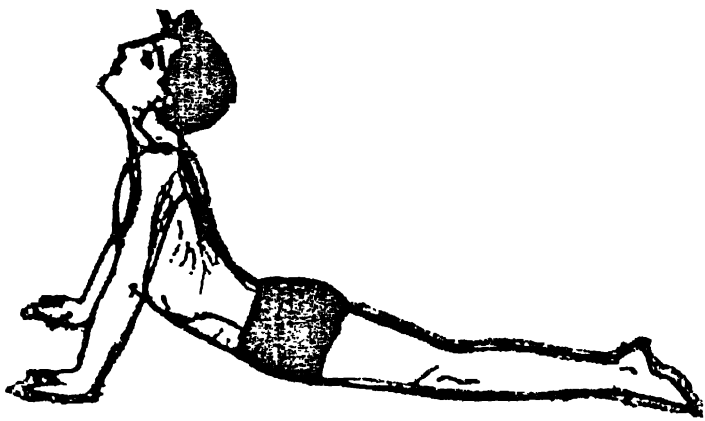


Fig. 5.12: Bhujangasana

Comments

Bhujanga in Sanskrit means "a cobra". When the full and correct pose of this asana is adopted, it resembles a hooded cobra. This asana is more beneficial to women for strengthening the ovaries and uterus. This asana belongs to the category of "sacrum asana" This asana has four variations the shpinx pose: the sarpasana pose, twisting cobra pose, the full cobra pose. People suffering from peptic ulcers, hernia and intestinal tuberculosis should not do this asana.

Technique

Lie flat on the stomach with legs straight and the feet extended. Place the hands, palms under the shoulders slowly raise the body the navel until the arms are straight but the stomach and the legs must touch the floor. Bend the head back gazing diagonally upwards. Remain in this pose for a couple of seconds. Breathe slowly and normally throughout.

13. Puran-Matsyasana (The Fish Pose)

Comments

The word Matsya implies "fish" in Sanskrit . The origin to the name given to this asana appears to be strange because it does not bear any resemblance to fish. The Sanskrit texts give justification that this asana can allow one to float in water like a fish. Matsyasana enables the centre of gravity more towards the middle of the body, allowing sufficient ventilation to the lungs and increase the capacity of the man to float. It is a counter posture to Sarvangasana and Halasana.

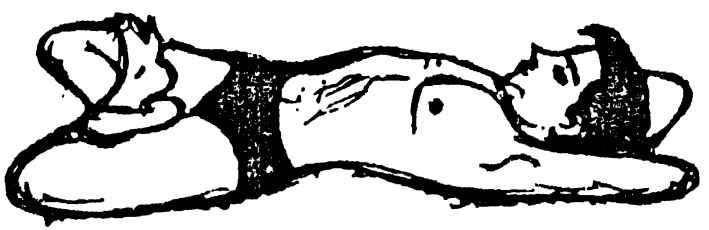


Fig 5.13: Puran-Matsyasana

Technique

Sit in the padmasana posture. Lie back, keeping the locked legs down on the floor. Support the body with the hands and elbows. Lift the head and the shoulders and arch the back pressing the crown of the heard on the

floor forming a bridge in which the shoulders and the back remain above the floor. Return to the original pose and relax.

14. Yadtulasana (Belly Raising Pose)

Technique

Lie down on a blanket with face upwards raise the legs and hands and maintain balance of the body on your legs and hands. While raising the body upwards inhale air and retain breath for a couple of seconds. Exhale breath slowly and rhythmically while keeping the body down. The power of this asna lies in the retention of breath. Relax for a couple of minutes.

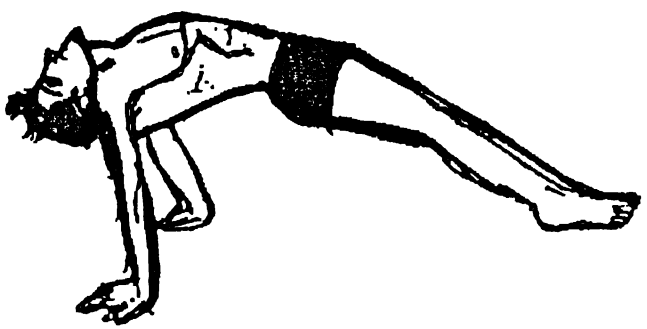


Fig 5.14: Yadtulasan

Benefits

This asana makes the spinal cord supple and elastic. It invigorates the nervous system, improves digestion, massages the skin pores and cells, pancreas, glands and pelvic organs. It cures skin eruptions psoriasis, pityriasis rosea, eczema and many parastic skin diseases.

15. Mayurasana (The Peacock Pose)

Comments

In Sanskrit Mayur means peacock. When performed well, this asana resembles a peacock spreading its tail.

This asana belongs to the advanced group of balancing postures. It is of gymnastic nature that needs a lot of muscular strength and coordination. This asana has number of variations and poses. This asana should not be attempted by those persons who are suffering from hernia, high blood pressure and stomach ulcers.

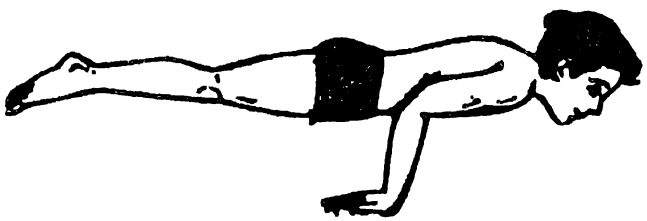


Fig. 5.15: Mayurasana

Technique

On a folded blanket kneel down, join the two arms together and rest and hands on the floor, palms down with fingers pointing towards the toes keep the hands firm. Bring down the abdomen slowly against the joint elbows. Support your body on your elbows. Exhale while raising the body off the floor and inhale while lowering the body.

16. Ushtraasana (The Camel Pose)

Comments

Ushtra means a camel. This asana is specially advised for persons suffering from spinal pain and spinal disorders. The beginners often feelaches, pain and fatigue while practising this asana. But they should not feel discouraged. A little time and constant practice are needed to adopt this asana well.

Technique

Sit in vajrasana pose with your feet and knees slightly apart. Stand on your knees and stretch the arms to the sides. Lean backward and put the hands on the heels.



Fig. 5.16: Ushtraasana

Stretch the neck backward and let the weight of the body rest on arms. Bend back as far as possible and push strongly. Remain in this pose for a couple of seconds and breathe slowly without any strain.

17. Gomukh Asana (Face of a Cow Pose)



Fig. 5.17: Gomukh Asana

Comments

"Gau" in Sanskrit means "Cow" and "Mukh" a "face". This asana is used for meditation, prayer and breath control. The asana when displayed correctly resembles the face of a cow.

Technique

Sit on a folded blanket on the heels, knees together and head, neck and spine straight. Bend the right arm, raise the elbow and lower the hand as far down the middle of the back without disturbing the upright posture. Bend the left arm and bring the left hand up the centre of the back until the fingers of both hands interlock. Return to the original position and relax.

18. Vrikshaasan (The Tree Pose)

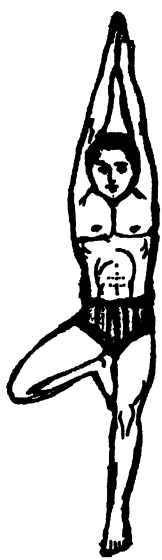


Fig 5 18: Vriksha Asan

Comments

This asana belongs to the inverted balancing group of asanas. It is one of the most fascinating and effective asanas. When performed correctly it looks like a tree.

Technique

Stand up right. Fix the right leg on the ankle. Fix the right foot on the left thigh. Bring the palms of the hands together a little above the head with the arms half bent. It will assist good balance to fix the gaze on a point level with the eyes on the wall. Breathe freely and deeply. Stay in this pose at least for ten seconds.

19. Jalandhar Bandha

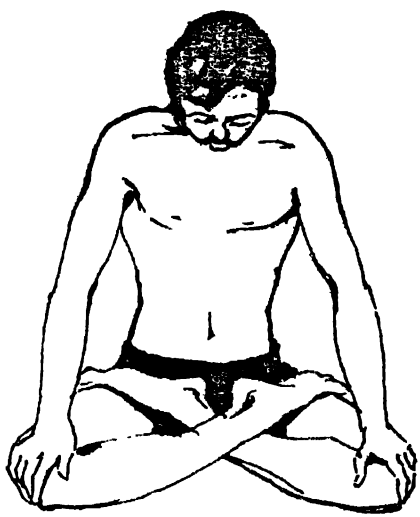


Fig. 5.19: Jalandhara Bandha

Technique

Sit in Padmasana or Siddhasana contract the throat. Bend the head such that the chin presses against the chest. After a few seconds, release the chin lock.

Benefits

The thyroids are toned up and their working regulated joint pains are caused by the thyroids overworking while sluggishness of these same glands causes dwarfs. By regulating the functioning of these glands, both these unnatural conditions can be countered.

20. Uddyana Bandha

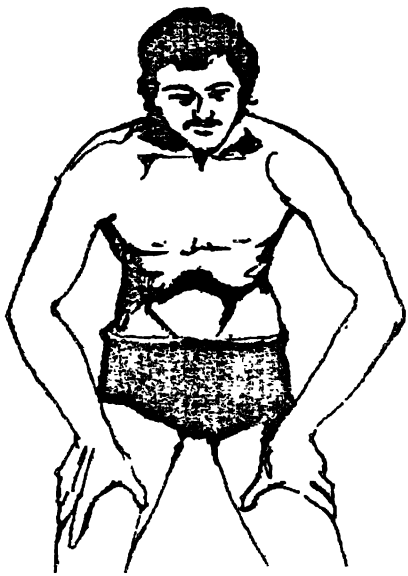


Fig 5.20: Uddayana Bandha

This type of bandha is performed on the left side. Stand in the same posture and stay at the Nouli of the middle, relax the pressure of the right hand slightly but keeping that of the left as usual now slightly incline the trunk to the left and move the abdomen muscles of the right side and this when perfected give rise to another rod-shaped muscles to the left side. Repeat it 5 times and relax.

21. Dhanurasana (The Boe Pose)

Comments

In Sanskrit, Dhanur means "a bow" This is a vigorous elaboration of Bhujangasanas. Abrupt jerky movement should be avoided in this asana. The beginners may find it difficult to take hold of the ankles with hands. They can overcome this difficulty by constant practice and determination. This asana is also highly beneficial for

women. The asana should not be practised by persons suffering from hernia, peptic ulcer, intestinal tuberculosis or any injury in the spine.

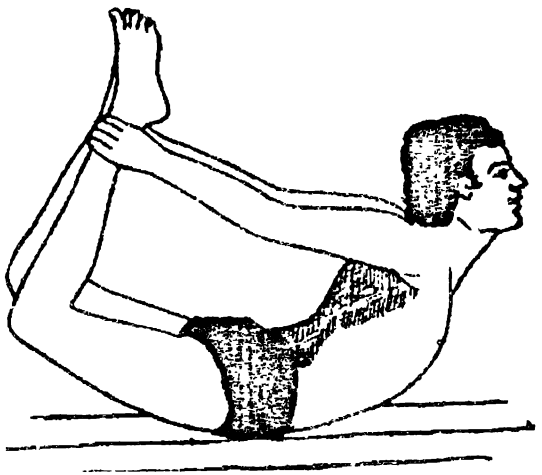


Fig. 5.21: Dhanurasana

Technique

Lie flat on the stomach and chest, flex the legs bringing the feet back towards the head. Raise the legs head and upper part of the body. While arching the back, take hold of your right ankle with your right hand and left ankle with left hand. Breathe slowly and normally. Remain in this pose for a couple of seconds. Return to the original position and relax.

22. Padanghushtasana (Forward Bend Pose)

Comments

This asana is praised and practised by many Hatha Yogis. This asana is for beginners and intermediate students as well. The asana can be performed by anyone with slight practice, suppleness and strength.

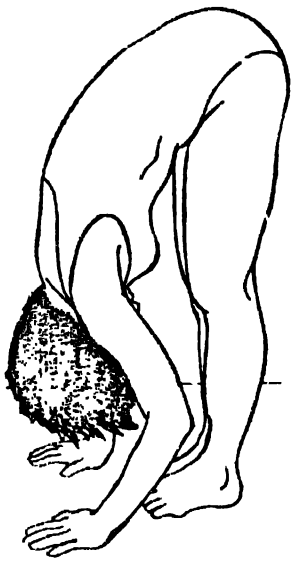


Fig 5.22: Padangushtasana

Technique

Stand upright, feet together breathe in deeply Raise the hands high over head, palms forward. The upper arms covering the ears, exhale and keep the legs locked. Bend forward from the waist and push the arms backwards above the ankle. Then slowly return to upright position. Regular practice of this asana will bring suppleness.

23. Naukaasan (The Boat Pose)

Comments

This asana is one of the simplest asanas belonging to the energy blocking group of asanas. Energy in the form of prana (life force) is in every part of the body It must have free flow Sometimes due to certain impurities or chemical reactions, the free flow is blocked resulting in stiffness. Rheumatism and muscular tension This asana when performed correctly resembles the shape of a boat. Hence named Naukasana. It has number of variations

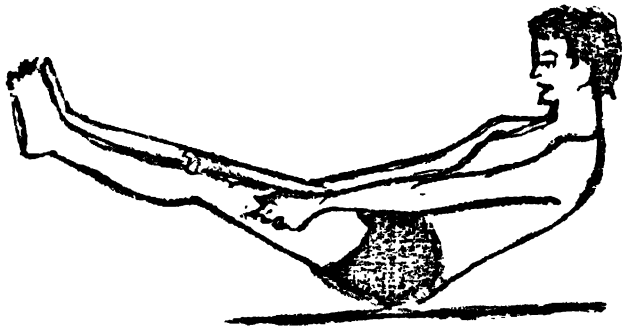


Fig. 5.23· Naukasana

Technique

Lie flat on the floor facing the sky with hands clasped at the back. Raise your feet, head and the chest up as to form a curve on the floor. With your body rest on abdomen in this pose the body looks like a boat. Breathe slowly and rhythmically. Remain in this pose for couple of minutes, and rock the body from one side to another like a boat.

24. Jeytikaasana (The Best Pose)

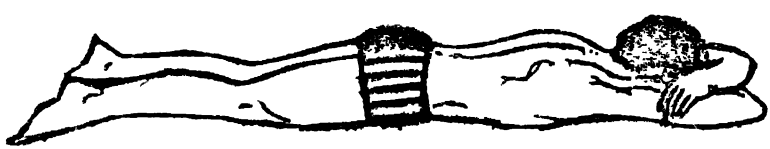


Fig. 5.24 ·Jeytikaasana

Comments

It is more or less the same as Advasana with slight variation. It is also very simple, easy and comfortable asana and can be performed by any one irrespective of age, sex or place.

Technique

Spread a blanket on the floor and adopt the pose of advasana. Interlock the fingers and place the palms at

the back of the head. Breathe slowly, deeply and rhythmically. Relax the whole body.

25. Shavasana (The Corpse Pose)

Comments

Last but not the least comes very Important, popular and highly powerful asana known as Shavasana (The corpse-pose). In the classic texts "Hatha Yoga Pradibka" this pose is called shavasana and in "Gheranda samhita". It is named as Mritasna. Both "Shav" and "Mrita" means corpse or dead body. As the name suggests, the practitioner lies on his back on the floor on the soft carpet or on a folded rug with eyes closed like a dead man. The wastes toxins are to be repaired and swept away from our body organism. Shavasana is the only asana that provides right relaxation to our psycho-physiological system.

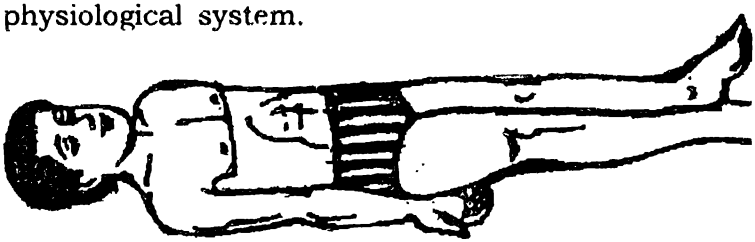


Fig. 5.25: Shavasana

Technique

On a soft carpet or blanket of folded rug lie full length on back with arms away from the body with palms facing upward and feet slightly apart. Close the mouth and eyes and withdraw the consciousness by stages beginning with the feet, the ankles, the knees, the abdomen, the chest, the neck and the face. The technique of this asana must be followed carefully. Rhythmic and deep breathing are absolutely necessary for concentration which gives complete relaxation.

6

Prana and Pranayama

Man is a living pulsing vibrating being. Of all the functions of his body, breathing is of supreme importance. Without food, man can live for a couple of days, without drink for a couple of hours, but without air man will die within a couple of minutes or seconds. Majority of the people do not know the art of breathing and their lungs are not properly ventilated. Millions of young men and women are suffering from digestive trouble, respiratory diseases, palpitation, Irritability and Heart ailments they with shrunken necks, pale faces, feel exhausted and nervous. Most of the diseases and ailments are due to polluted environment, unnatural way of living, bad habits, lack of wholesome food and lack of exercise. In this age of environmental pollution, respiratory diseases, such as influenza, cataract, common cold, tonsillitis, Bronchitis, Preumonia, Coryza are increasing in highly Industrialised cities.

One of the important things the ancient yogis discovered was the close relationship between the emotions and breathing When we are excited, our rate of respiration become faster. When we are composed or relaxed, our breathing is calm and slow. By control of the breath, the mind can be settled and made one-pointed. Through the practice of asanas one can control the subtle, the astral body. As there is close connection between the breathe and nerve-currents, control of breath leads to then control of vital inner currents.

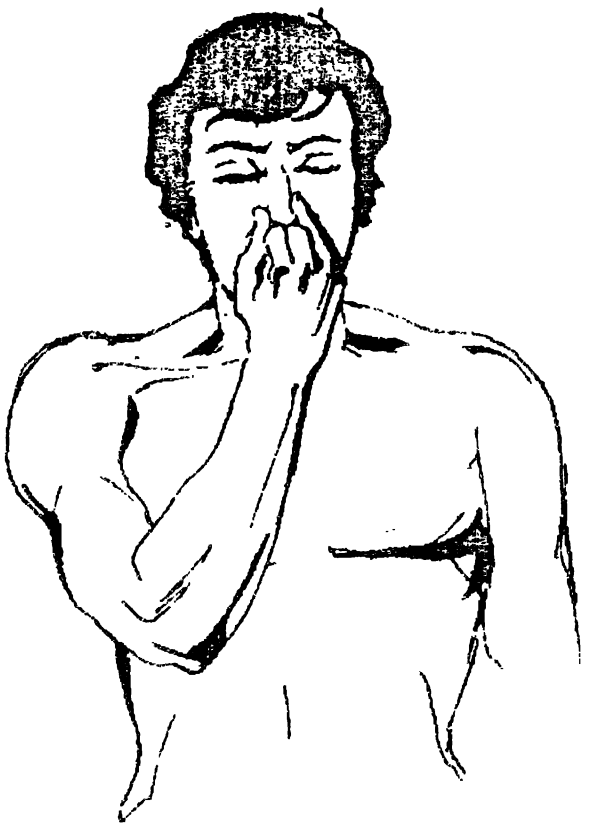


Fig. 6.1: Pranayama

According to Gherda yogi, four things are necessary before one can practice pranayama right place, right time, right diet and purification of nerves. The word nadi stands for both physical as well as psychic channels inside the body. The pranayama exercises, if performed rightly can be a means of greater bodily vitality and of greater bodily vital influence over the emotions and the mind. The word prana comes from pranayama or movement. Prana is the fundamental energy of course fire, thick or thin, big or small which is present in the universe. It is the sum total of all energy that is present in Nature. All physical and mental forces and powers

are the result of prana. It vibrates through all life from the tiny flower to colossal tree, from creatures and animals to human beings. Prana is that energy which is the basis of life. Prana is pervading all forms of matter, yet it is not matter. Prana can reach which is beyond the reach of air. The word "Prana" is often confused with breathing. When prana is present, breathing takes place. The word prana means energy which is the basis of all life. Breath goes directly to the lungs while prana goes directly to the nadis. Prana is inside the blood, inside the air, inside the bones. Prana is related to mind and through mind to will and through will to the Individual soul and through this to the supreme Being.

The terms "Respiration" and breathing are sometimes used as synonyms but there is fundamental difference between the two. Breathing is the mechanical act of inhaling air into and exhaling it from the body. A body starts breathing immediately after its birth, the moment placenta is cut from its body. Respiration however, takes place in the embryonic stage long before birth. Respiration, life and energy giving process goes on non-stop from the womb to the tomb.

Pranayama is scientific, mental and physical exercise. In this exercise, the abdominal muscles get good exercise by controlled movement and by their alternate contraction and relaxation. Pranayama means the rhythmical breathing exercises by which lungs, nerves and mind functions are regulated. The technique of pranayama is only an attempt to stop all the activities of nerve currents and their leakage. A man who takes to pranayama must observe purity of thought, word and deed

Pranayama can be divided into two classes i.e., lower and higher, the former being meant for physical and mental health, and the other for higher spiritual attainments. Breathing i.e., high breathing, middle way breathing and low breathing and low breathing. In high

breathing, the upper part of the chest, the lungs and the lower part of the lungs are moved. In this kind of breathing, the minimum amount of air enters the lungs with the maximum of effort. The middle way breathing is better than high breathing. Normally people in normal health breathe in this way. Low breathing is the best and more efficacious. In this kind of breathing, the movements of the diaphgram play very important part and air rushed in to fill the lower and middle parts of the lungs. But during the practice of pranayama all the three kinds of breathing are involved. The process of pranayama involves purka. (Inhaling), Kumbhaka (Retention of breath)., and Rechaka (Exhalation of breath) pranayama destroys all sins and develops the working and capacity of the lungs the heart the liver and other organs of the body All the tissues and nerves get proper supply of blood and oxygen and this ensures proper supply of nerve-energy for the different functions of the body.

Observance of Rules

In order to get maximum benefit of pranayama, it is essential to observe following basic rules:

Place: The place selected for doing pranayama exercises must be airy neat, clean, free from dust, dirt, smoke, flies, insects and other disturbing factors. If the place of practice is a room, it should be airy and well-ventilated. During the hours of pranayama no incense should burnt. Pranayama must be practised with due care and attention otherwise it becomes harmful and dangerous.

Food: Unclean, unbalanced, improperly cooked food should be avoided. Unclean and unwholesome food is likely to cause different ailments and evil desires. One should take food that is simple nutritious and easily digestible. Avoid taking too much of sour, sweet and pungent things. Food should be yogic that is sattvic.

Sexual life:- Married people must lead a well-regulated sexual life. In taking up yogic asanas and pranayama, a well regulated sexual life is necessary. Sexual energy is the greatest power of the body and the mind. Instead of wasting this power it should be checked and controlled and converted into great mental energy called "Ojas shakti". Most of the maladies, diseases and ailments are due to reckless sexual enjoyment. Married people who desire peace, happiness and longevity of life should therefore lead a well regulated sexual life.

Some other rules:- (1) The practice of asanas and pranayama must be regular and systematic.

(2) The mouth, nose, teeth, tongue should be well cleaned before doing pranayama.

(3) Pranayama exercise should be done in sitting posture preferable in Padamasana.

(4) In practising Pranayama body should not shake. It can be very injurious.

(5) After doing pranayama exercise, relax in shavasana for a couple of minutes.

(6) While doing pranayama exercise tight clothes should not be worn.

(7) During menses period women should not do pranayama or any asana except shavasana.

(8) Never practise pranayama when feeling sick, tired or when in sorrow.

(9) Do not take bath at least for half an hour after doing pranayama.

(10) A person doing pranayama must avoid anger, fear, anxiety too much sleep and too much wakefulness.

Since alopecia (Baldness), a disease of loss of hair, partial or general, is associated with hair follicles and skin. Moreover, temporary baldness occurs from localized eczema psoriasis, so the following pranayama exercises must be done for the prevention and cure of alopecia (Baldness).

1. Sukh Purvak Pranayama

Comments

This type of pranayama contains most of the benefits of pranayama. It equalises the Intensity of the flow of air of the two nostrils. It is extremely beneficial to the people suffering from cough, cold respiratory ailments and skin diseases.

Technique

Sit in sukhasana or Padmasana and close the right nostril with right thumb. Inhale through the left nostril. Inhale as slowly and naturally as you can. Fill your lungs with air. Now close the left nostril with the ring finger of the right hand and retain breath for a couple of seconds and exhale slowly through the right nostril. As soon as the exhalation is complete inhale again through the right nostril. Inhale full and then close off the right nostril with the right thumb and exhale through the left nostril. Repeat this ten times.

2. Samveta Pranayama

Comments

This pranayama is practised as a warming up exercise performed first of all for cleansing breath before starting the advanced exercises. It purifies the entire system and fills the body with energy and vitality.

Technique

Sit in Padamasanaa or Sukhasana posture. Inhale air with both the nostrils simultaneously. Hold the breath for a few seconds and then exhale with both the nostrils Both inhalation and exhalation should be done slowly and comfortably without any jerk or stress. Repeat this exercise 15 times.

3. Sahita Pranayama

Comments

This exercise should be done after sukh purvak and samveta pranayama. These three exercises are the basic

exercises for advanced pranayama. They warm-up the system and prepare the practitioner for higher practices. Sahita pranayam is an elementary exercise for harnessing the wonderful mind. This exercise has great effect on Psychic nerve channels.

Technique

Sit in any comfortable asana and inhale air with both the nostrils and retain breath as long as you can conveniently. Then release the breath slowly with both the nostrils. This completes one round. Repeat it 10 times.

4. Ujjayi Pranayama

Comments

Ujjayi pranayama creates heat in the body. So it is more beneficial in cold season. It is more beneficial to persons who are very sensitive to cough, cold, influenza, bronchitis, and skin troubles. It also reduces blood pressure. Ujjayi induces relaxation very quickly.

Technique

Sit in Padmasana or Sukhasana. Close the eyes and the mouth. Inhale through both the nostrils in a slow, smooth and rhythmic manner. Retain the breath as long as you can without any stress or jerk and exhale through the left nostril by closing the right nostril with your right thumb. Expand the chest while inhaling during the inhalation a peculiar sound is produced owing to the partial closing of glottis. Now Instead of exhaling through the left nostril. You can exhale slowly through both the nostrils.

5. Bhastrika Pranayama

Comments

Bhastrika is also a powerful pranayama exercise and should be done under the supervision of a teacher. In this exercise lungs get maximum exercise. The entire respiratory system is invigorated vitalised and purified. This exercise should not be done by those who are

suffering from any heart or lung ailments. With Bhastrika pranayama, heat is produced in the body and great amount of carbon dioxide is expelled.

Technique

First stage: Chandrika Bhastrika. Sit in siddhasana or padmasana. Close the mouth and the eyes. Close the right nostril with the right thumb and inhale through the left nostril. Exhale through the same nostril. The inhalation and exhalation should be done quickly.

Second stage: Suryang Bhastrika. The same process should be done with another nostril, keeping the left nostril closed then retain breath for a couple of seconds. The period of retention should be increased gradually. Repeat it 10 times.

Final stage: Repeat the same process as above but use both the nostrils. Inhale and exhale readily. The last breath should be inhaled and retained at least for 20 seconds one can retain the breath as long as one feels comfortable. Repeat it 10 times.

6. Sheetali Pranayama

Comments

The word Sheetali implies cooling. By doing this pranayama exercise cooling effect is experienced throughout the body. Sheetali is a good blood purifier and it removes head and facial skin eruptions. It controls high blood pressure, It also cures disease of the throat and destroys chronic dyspesia. It also cures consumption and Alopecia.

Technique

Sit in any comfortable asana and protrude the tongue out of the mouth and curl it up like a tube. Inhale slowly through the mouth and through the tube of the tongue. Retain breath for a couple of seconds. Exhale through both nostrils. Repeat it 10 times. Practise this exercise daily during summer season.

7

Diet—Alopecia and Hair Disorders

Growth and healthy hair depend upon nutritious diet. Iron deficiency causes harm to the hair by lowering the haemoglobin level which in turn reduces the oxygen---carrying capacity of the blood. Oxygen deficiency affects the hair follicles, leading to dryness of the scalp and hair loss. Iron is essential requirement for life. It is necessary for the production of haemoglobin. The best food sources of Iron are whole grain cereals, pulses, and legumes and fish. The best plant sources are green leafy vegetables such as dry lotus stems, cauliflower, greens turnip greens, fruits such as black carrats, water melons, and raisins. Enzymes and hydrochloric acid in the stomach are needed for proper assimilation of Iron. Older people are often anaemic inspite of plenty of Iron in their diet.

Rich Sources of Iron

Cereals	*Mg.*
Rice bran	35.0
Rice flakes	20.0
Bajra	8.0
Rice puffed	6.6
Wheat	6.0

Pulses and Legumes

Soya Beans	10.4
Bengal gram	9.5
Moth beans	9.5
Cowpeas	8.6
Lentil	7.6
Peas, dry	7.0
Bengal gram	4.6
Green gram	4.4

Vegetables

Lotus stem dry	60.6
Cauliflower greens	40.0
Turnip greens	28.4
Cowpea leaves	20.1

Fruits

Currants black	8.5
Melons water	7.9
Raisins	7.7
Dates dried	7.3
Apricots dry	4.6
Custard apples	4.3

Pathologically, alopecia premature is essentially one of atrophy, both of the connective tissues and the hair producing structures, consequent on a blood diminishing supply.

Hair is affected early in protein deficiency. Proteins are extremely complex organic compounds containing the elements carbon, hydrogen, oxygen and nitrogen. The presence of nitrogen distinguishes protein from carbohydrate and fat. Protein contains an average of 16 percent nitrogen. Some specialized proteins also contain Iron, phosphorus, Iodine, copper and other Inorganic elements. If the protein molecules is broken down by hydrolysis, there are found to be varying number of simpler substances called "amino acids". Twenty different amino acids are widely distributed in protein. All proteins are made up of amino acids. Life without protein is not possible. Growth, development and function depend upon protein which in turn depend upon amino acids. Arginine is an important amino-acid. It is obtained from food during the growth period but can subsequently be manufactured by the body. Eighty percent of the male seminal fluid is made of arginine. Major food sources of arginie are peanuts cashew nuts, piyal seeds and walnuts. Lack of arginie causes hair loss and alopecia Histidine is another amino-acid during the period of growth. Histidine is found in fruits such as banana, grapes, milk and milk products. It is also found in green vegetables though in lesser quantity.

Isoleucine is another essential amino acid for the production and maintenance of body proteins. Rich sources of Isoleueine are eggs, chicken, mutton, pulses, soya beans, cheese, milk and cereal grains. Marasmus (Withering of hair) is caused by protein-calorine deficiency. The human need for zinc is small but its importance is great. Zinc is a bluish-white metallic element. It is present in the body mostly in combination with other constituents of the body. About 20 to 30 percent of the zinc in foods is absorbed by the body through the small intestines. Zinc is needed for healthy skin and hair, proper healing of wounds and male virility.

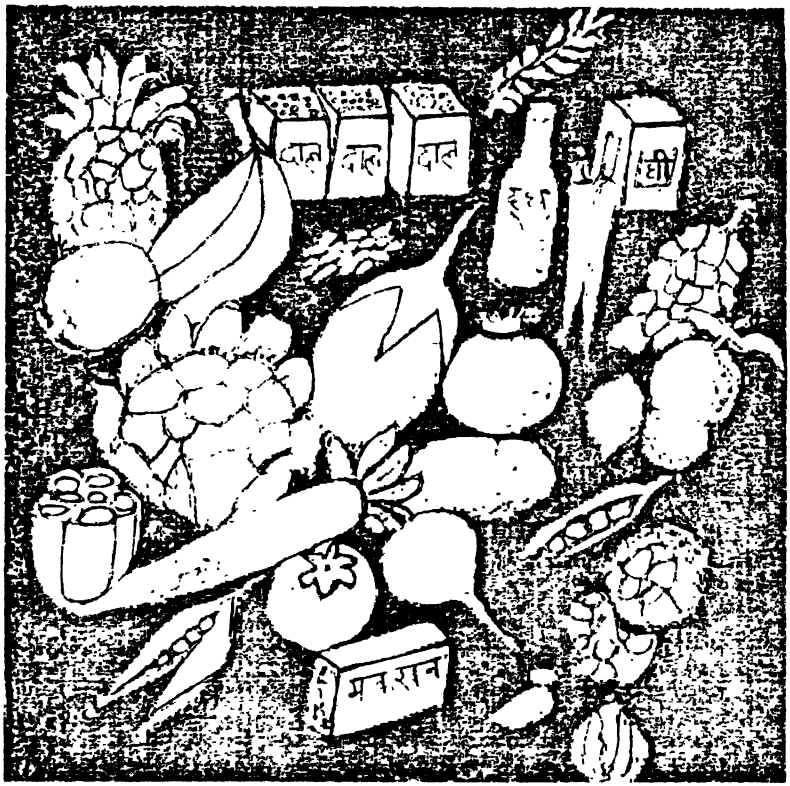


Fig. 7.1 The Yogic Diet

The rich sources of zinc are Bengal gram, soya beans, black gram, bajra, lentil, maize dry, wheat whole, peas, potatoes, bitter gourd, cauliflower, ladies fingers, onions, carrots, cabbages, spinach, almonds, walnuts. The zinc deficiency in the diet has been reported to be the cause of hair loss and alopecia. Vitamin B3 or niacin is an important vitamin of the B group. Niacin is absorbed from both the stomach and intestines and stored in all the tissues. It is exerted in the urine. Deficiency of Niacin may result in sores in the mouth, nervousness, skin lesions, insomnia, chronic headaches, digestive disorders, mental disturbance and depression. The rich sources of Niacin are Rice bran, Barley, Wheat flour, Rice

puffed, Jower, Maize dry, Red gram, split kesri, Lentil, turnip greens, Beet greens, carrot leaves, Lotus stems, Potatoes, Groundnuts, Almonds, Chilgozas, Cashew nuts, Apricot. Dates dry, Mangoes and Cow's milk, hair loss and alopecia can occur due to the deficiency of Inositol. Inositol belongs to vitamin B group. It is a crystalline compound having a sweet taste. It is highly soluble in water. Over 99 percent of injested inositol is absorbed by the body. Inositol is essential for the transportation of fat in the body. It helps lower cholesterol level. Inositol promotes the growth of healthy hair and helps prevent its falling. The most important sources of Inositol are liver, brewer's yeast dried lima Beans, grape fruit raisins, peanuts and cabbage. The deficiency of Inositol can cause alopecia or patchy Baldness, hypertension, and eczema. Inositol is one of the three antigrey hair B Group vitamins. Baldness in men is considered to be a nutritional deficiency caused by lack of Inositol. A deficiency of this vitamin causes hair loss. Concentrated inositol has been used in a few cases of baldness. Since stress is one of the causes of alopecia. Vitamin B5 (Pantothenic Acid) is a pale, yellow oily liquid which is not crystallised but its calcium salt crystallises readily and this is the form in which it is generally available. Pantothenic acid is absorbed from the alimentary tract, and excreted in urine and mother's milk. Panthothenic acid is a part of the enzyme system which plays a vital role in the metabolism of carbohydrates, fats, proteins. This vitamin is involved in all the vital functions of the body. It is primarily used as an anti-stress factor and protects against most physical and mental stresses. It helps in maintaining the normal growth and development of the central nervous system. Pantothenic acid is found in large quantities in foods. The best sources are yeast, liver and eggs. Other sources are peanuts. mushrooms, split peas, soya beans and soya bean flour. Rich sources of vitamin

B5 are oatemeal dry, wheat germ, brown rice, wheat flour whole, qentil and blackeye peas dry. The deficiency of pantothenic acid can cause fatigue, infections, greying and loss of hair, mental depression, dizziness, constipation, skin disorders, retarded growth and Insomnia.

Another vitamin, vitamin B6 is useful in curing stress and skin disorders. On account of its sedative action on the central nervous system, the use of vitamin B6 has been found very useful in psychoneurosis, mental Irritability and mental stress. Moreover, vitamin B6 is very useful in the treatment of morning sickness during pregnancy. This vitamin prevents nervous and skin disorders and Hair disorders. This vitamin regulates the balance between the sodium and potassium in the body which is important for the functioning of the body. The main sources of this vitamin are yeast, sunflower seeds, soya beans, and walnuts. Among plant foods lentils, lima beans and other vegetables contain fair amount of vitamin B6. This is also called "Versatile vitamin".

Moreover another vitamin which strengthens immunity is vitamin B8 called Biotin. It is also a member of the B complex group. Biotin is important for healthy immune system. It is involved in the metabolism of carbohydrates proteins and fats. It is essential for the growth of the hair. It prevents premature greying of the hair as well as hair loss. The rich sources of Biotin are brewer's yeast. rice bran, rice germ, rice polishings, butter, whole wheat, brown rice, soya beans, lentil, mushrooms, cauliflower and almonds.

Chlorine is a natural disinfectant. It is essential for the proper distribution of carbon dioxide. It is necessary for the manufacture of glandular hormone secretions. Chloride regulates the alkali-acid balance in the blood. Potassium chloride is also essential for the production

of hydrochloric acid in the stomach which is needed for proper protein digestion. The main sources of chloride are barely, wheat, pulses, green leafy vegetables, melon and pineapple. The deficiency of chloride can cause loss of hair and impaired digestion.

Iodine is one of the important minerals for the development of the body. Most of it is concentrated in the thyroid gland. Dietary Iodine is absorbed from the gastrointestinal tract into the blood. The chief store house of iodine in the body is the thyroid gland. Thyroxine which is secreted by this gland, contain Iodine. The best dietary source of iodine is iodised salt. The deficiency of Iodine can cause roughness in the skin and hair loss.

Selicon is another important mineral. It is essential for the proper functioning of nerve cells and tissues. It controls the transmission of nerve impulses. It contributes to the strengthening of bones in the body. It is also essential for the growth of hair, nails and teeth. Deficiency of silicon can cause ageing, skin disorders and hair loss.

The yogic diet prevents and cures many diseases. Yogic diet is sattvic diet simple but nutritious. Yogic diet contains vitamins, minerals, and amino acids. According to yoga, right kind of food is most important factor in the promotion of health. Green leafy vegetables, fruits, milk and curds give vigour, vitality to the body and help fighting diseases and imparting longevity and in prevention ageing.

PART-XI

CONSTIPATION

1

The Digestive System

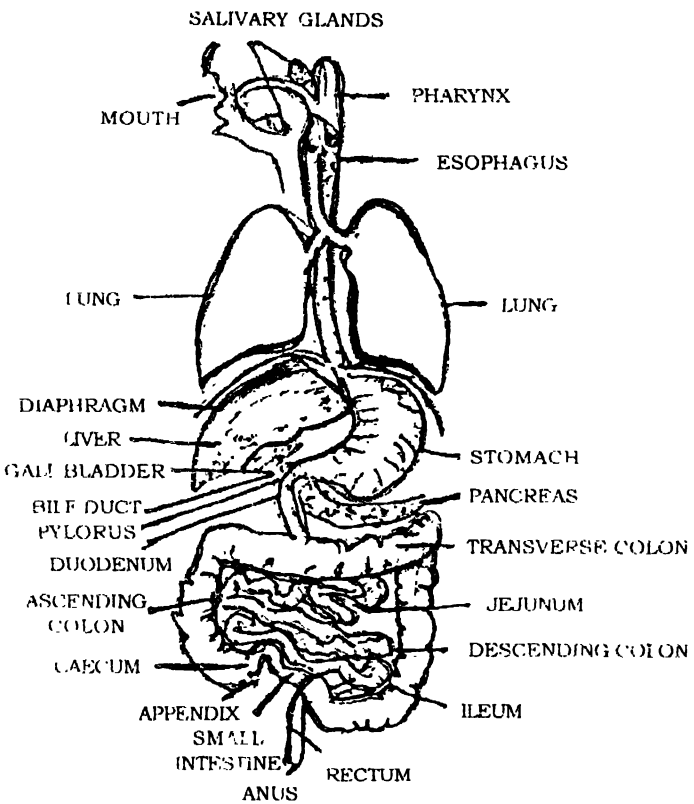


Fig 1.1: Digestive System

It is said that human body is a chemical engine that selects its own fuel. We are able to walk and talk and perform other tasks because of the energy we get from

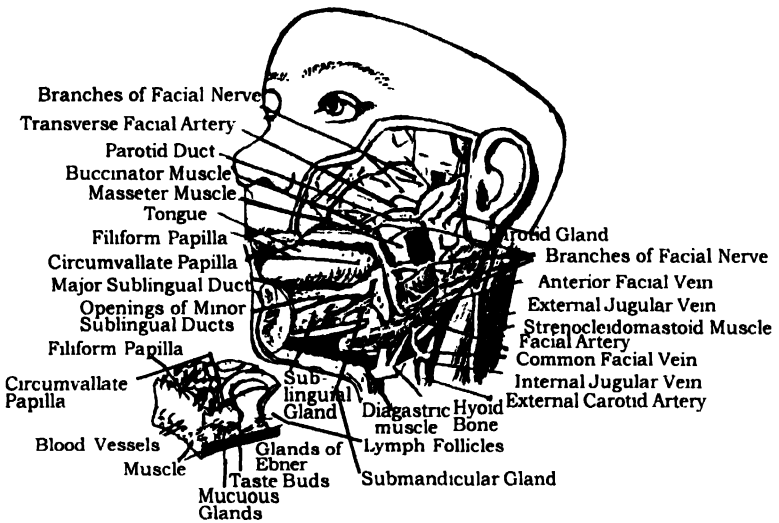


Fig. 1.2: Mouth and Surrounding Area

food. And within the limits of the menu. We usually can choose from a wide variety of fuels for our bodies. For much of the trip through the chemical refinery or digestive system, food is either squeezed or pushed by muscles. It also is dissolved by a series of digestive juices. The digestive juices (or enzymes) serve as catalysts— they produce chemical changes in the food we eat with out becoming part of the chemical produced. In the mouth, the food is crushed and chopped by the teeth which are brought together with the powerful forces of the jaw muscles. The tongue itself is a bundle of muscles. The tongue muscles can change the shape of that organ, making its surface convex or concave. They also raise or lower the tongue and move it from side to side as needed to assist in chewing food. On the surface of the tongue are sense organs called the taste buds. The taste buds are scattered among the tiny papilla that give the tongue its rough, rasp-like surface. Taste buds can detect four taste sensations---sweet, sour, salty, and bitter. The teeth have specialized jobs in preparing food for digestion. The incisors and canine teeth, at the front of the jaw, cut and tear food into smaller pieces. The molars, at the rear, grind the food.

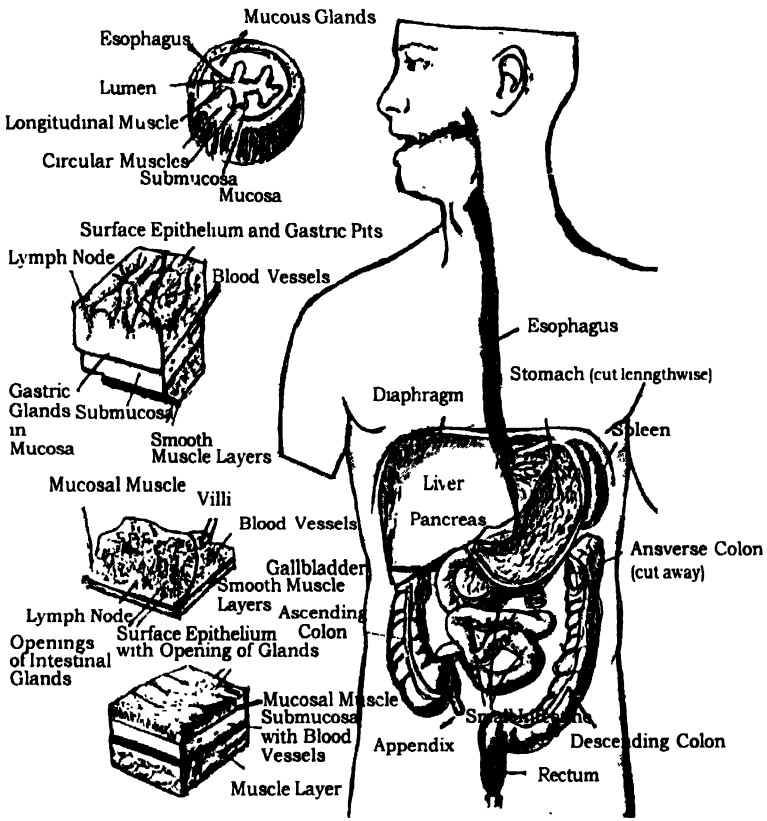


Fig. 1.3: The Digestive System

The Saliva

While food is being pulverised into the pulpy mass called a bolus, the digestive juice of the salivary glands a breakdown of the carbohydrates. Enzyme in saliva splits the molecules of starch into smaller molecules of sugar. This enzyme cannot breakdown starch grains that are still enclosed in their natural cellulose envelopes. For this reason starches should be cooked before eating. The fluid of the salivary glands serves several other purposes. It provides moisture needed by the taste buds.

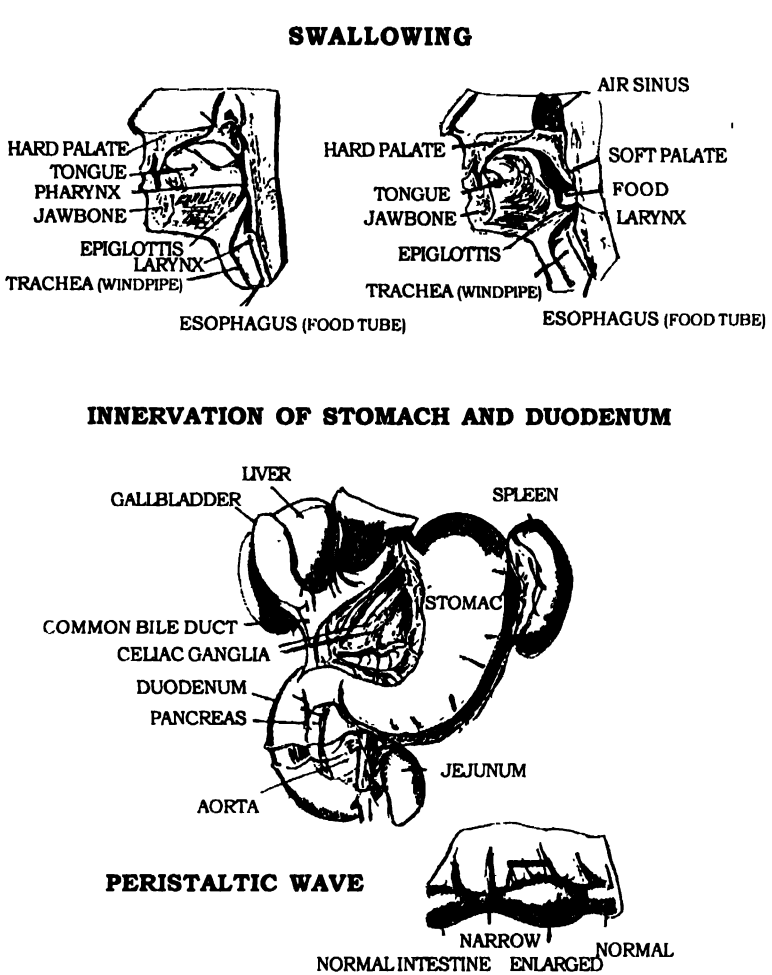


Fig. 1.4: The Digestive System

Saliva also has a cleansing action on the teeth. It washes away food particles that otherwise might provide a home for bacteria. The salivary glands look like bunches of tiny grapes. The largest the parotid is located in front of the ear. Two salivary glands in the lower jaw are sublingual, under the tip of the tongue, and the submandibular, under the edge of the lower jaw. There

is a set of the three glands on each side of the mouth. When the bolus of food has been thoroughly chewed it is ready to be passed into the stomach-- by swallowing. The muscles of the cheeks, the tongue and the roof of the mouth form a chute. The tongue presses upward and backward against the hard palate. The soft palate is raised as the food passes toward the back of the mouth, simultaneously closing the opening to the nasal cavities. At the same time, the epiglottis, a lid made of cartilage enclosed in the mucous membrane and located at the base of the tongue over the larynx at the top of the wind pipe, closes. Also at the same time, the larynx moves upward against the lower surface of the epiglottis. This seals off the windpipe at the instant of swallowing. After the food enters the esophagus, it is moved along by muscle action called peristalsis which is carried out by involuntary muscles. The digestive tube has two layers of involuntary muscles. The inner layer forms a series of circles about the tube. When any of these muscles fibres contract, the tube becomes smaller at that point. The outer muscle layer is longitudinal----its fibers run the length of the tube. The longitudinal muscles contract as the circular muscles relax. The alternate contraction and relaxation of the two sets of muscles pushes food along the digestive tube in peristaltic waves. Because of peristaltic action of the muscles in the esophagus, swallowing is possible in any body position.

The Stomach

The Stomach is an irregularly pear shaped bag, situated in the upper and left part of the abdomen. When moderately distended, the thick end of the pear or fundus bulges upward and to the left, while the narrow end is constricted to form the pylorus, by means of which stomach communicates with the small intestines. The cardiac orifice, where the esophagus enters, is placed about a third of the way along the upper border from the left end of the fundus and between it and the pylorous,

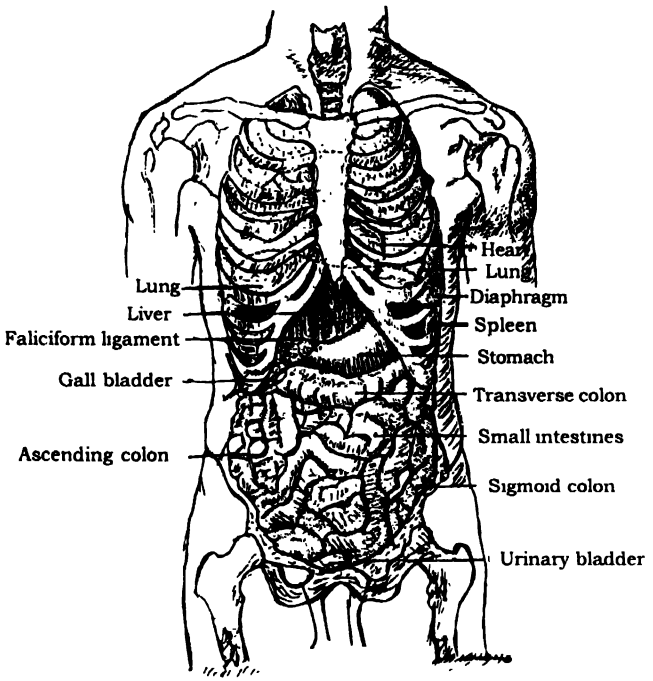


Fig. 1.5: Abdominal and Thoracic Viscera, Anterior View

the upper border concave and is known as the lesser curvature, from the cardiac to the pyloric orifice, round the lower border is the greater curvature. In front of the stomach are the liver (in-part), the diaphragm and the anterior abdominal wall, while behind it are pancreas, left kidney, left adrenal, spleen, colon and mesocolon. When the stomach is empty, it contracts into a tubular organ and the transverse colon ascends to occupy the vacant space. The stomach's gastric glands secrete hydrochloric acid and several enzymes. One enzyme, renin curdles milk. The same enzyme has been used for many years in the production of cheese. Another enzyme, lipase. Splits certain fats, including those in cream and egg yolk, to form a new chemical. A third enzyme pepsin, splits the chemical formed by the proteins and hydrochloric acid into smaller units. The

pepsin enzyme also digests the milk curds formed by the renin. The time taken for a meal to be changed by the stomach into a semifluid called chyme varies, from about three to five hours. Fluids as might be expected, pass through the stomach within minutes. Carbohydrates, among the solid foods, are handled most quickly by the action of the stomach's muscles contractions and the digestive juices. Proteins take a longer time, and fats require the most time. Some fats, infact, slow down the digestive process for. Other foods in the stomach by slowing down the secretion of the gastric juices. The pyloric sphineter at the lower end of the stomach controls the emptying of chyme into the next station along the digestive route, the small intestines. Like the cardiac sphineter between the esophagus and the stomach, the pyloric sphineter is a thickened band of circular muscles. Waves of peristalsis push the chyme through the opening formed by the pyloric sphineter and into the small intestines.

The Small Intestines

The small intestine is so named because of the diameter of its tube. It is about 20 fit. Long or about four times as long as the large intestines. The first part of the small intestines is a short horseshoe----shaped section known as the duodenum. More digestive juices are added to the chyme entering the duodenum. Also added to the chyme are fluids from the pancreas fluid contains a number of enzymes that act upon all kinds of foods---proteins are broken down into amino acids, large sugar molecules are changed to simple sugars, and fats are reduced to fatty acids in preparation for absorption into the blood or lymph vessels. Insulin also is secreted by the pancreas but it is absorbed directly into the blood. It is destroyed when exposed to the digestive juices, which explains why it cannot be taken by mouth by diabetics

for control of blood sugar levels. The orapilis for diabetics have effects similar to insulin, but are not insulin. When the pancreas is unable to supply insulin to the body, diabetes results. Bile, an orange coloured fluid, may enter the duodenum through a duct directly from the liver or from the gall bladder, where bile is stored. Bile is composed mostly of water, but it contains pigments from red blood cells that have been destroyed. The pigments undergo chemical changes in the Intestine and eventually are excreted, giving the yellow brown colour to faces. However, bile also contributes to digestion by emulsifying fatty foods and making them easier to absorb. Bile also reduces the acidity of the chyme. Beyond the duodenum, there are about 8 feet of small intestines called the jejunum and beyond that about 12 feet known as the Ileum. The diameter of the small intestine. Gradually decrease along its length At the junction of the small and large Intestine, the bore is about half the diameter of the duodenum. The Interior of the small intestine is carpeted with microscopic finger like projections called Villi. The cells which cover the villi permit the absorption of water and lymph small amounts of products of digestion are absorbed through the walls of the stomach but most of the small molecules of sugars, amino acid, and fat products are absorbed through the millions of villi in the small Intestine. The villi are in constant motion, swinging back and forth and changing in length. The motion of villi keeps the chyme thoroughly mixed with the digestive juices while molecules of food pass through the cells on their surface. Fat products generally enter lymph vessels in the villi while sugars and amino acids enter blood capillaries. The blood vessels carry the food products to the liver while the lymph vessels move their food units into a duct which empties into the subclavian vein, near the top of the rib case.

The Large Intestines

After travelling along the chemical refinery's conveyor belt to the end of the small Intestine, about all that remains of a meal is water and waste products. These pass into the large intestines through a valve which prevents a back flow into the small intestine. The large intestine about 5 feet long, has the general shape of a picture frame as it runs upward, across and back down through the abdominal cavity. It has no villi and fewer folds than are observed in the small intestine. Much of the water is absorbed through the wall of the large Intestine. The waste products form the semisolid feces that are excreted through the rectum. Some waste products including salts and proteins are filtered from the blood, along with excess water, by a series of tubules in the kidney. The waste is excreted as urine. Food products carried by blood vessels from the walls of the digestive tube are delivered to the liver, the largest organ in the system and an important chemical plant. The reddish---brown liver manufactures proteins, processes carbohydrates, absorbs fat products, and makes them available as fuel, serves as a store house for vitamins and minerals, processes iron the blood system and renders harmless some of the poisons that enter the blood stream. It also despatches sugars to the Tissues to burn as body fuel. A thin membrane called the peritoneum lines the walls of the abdominal cavity and covers the organs within the cavity. A double layer of peritoneum connects some of the organs, helps hold them in place, and carries blood and lymph vessels. The membrane in some places may have quantities of fat which help the organs conserve body heat and protect them against injury.

2

Constipation and Its Causes

Constipation implies a faulty functioning of the lower bowel resulting in undue retention of faecal material which usually becomes dried and often hardened. Some have defined constipation as infrequent evacuation of the faeces. Acute constipation is associated with intestinal obstruction, whether mechanical or paralytic in origin, of which it forms one of the cardinal symptoms. The chronic form is by far the type, usually denoted by the term "Constipation". What constitutes infrequency differs in different persons. Some have a bowel movement after each meal, while others open their bowels every two or three days. Each of these rhythms is compatible with normal health. Chronic constipation is considered to be of two types:-

1. Colonic Constipation.
2. Dyschezia Constipation.

Colonic constipation denotes delay through the colon as a whole due to insufficient propulsive movements, although segmental movements may actually be increased. Colonic constipation may also be due to mechanical interference with the passage faeces. Deficient movement may result from inadequate stimulation of the colon from insufficient faecal bulk due to diminished intake of food. Some doctors regard any patient as constipated who does not have his bowels

open daily even if he has been taking no food by mouth. A starved patient cannot have a daily bowel action and movements will not return until two or three days after he has started eating again. Inadequate stimulus to colonic movements is also a sequel to a previous purgation which leaves the bowl empty. Many people have irrational Ideas about the value of cleansing the colon and a horror of retaining faeces for longer than a day. Such patients may take purgatives daily or have what is known as "Clean out" once a week as part of a purification ritual. Their colon is never allowed the chance of normal stimulation from the faecal mass and acquiring a natural rhythm.

Coated tongue foetid breath, sudden headache, giddiness, lethargy, want of sleep, no clearance of bowels heaviness of the abdomen, no motion for days together, scanty, insufficient, offensive stools are some of the signs of constipation. According to yoga therapy constipation is the root cause of many diseases. The filthy matter gets accumulated, decomposes and contaminates the blood with poisonous gas. If blood is made morbid with such poisons, the other organs fail in their performances for want of nourishment which means total breakdown in the whole body mechanism. The most common causes of simple non-organic constipation is a habitual failure to empty the rectum. This type of constipation has been named "dyschezia". Following causes can result constipation:-

1. Sedentary Habit

Science has given many comforts to modern man but these comforts have made man lazy, lethargic, dull and dreary. Lack of exercise and sedentary life style have given many ailments and diseases to man. The proper functioning of the organs of the body cannot be expected by Idle and lethargic people who never like any exercise. This interferes with the healthy function of organs as a whole and they usually become constipative.

2. Unbalanced Food

Constipation is an unnatural and abnormal condition. Nature has endowed the Intestines with the capacity to void the waste matter that remains after food has been digested. The treatment of constipation should start in the kitchen and not in the lavatory. Hard food, fats and rich food demand over activity. Such foods, undigested produce ptomaine that depresses the entire system. Our food should contain two parts fruits and vegetables and one part cereals. The diet has been discussed under separate chapter yogic diet.

3. Inadequate Liquids

Water is a natural curative we take water whenever we feel thirsty. Drinking adequate water is good for health. But most people do not know why water is needed for the body. What happens when the body does not get adequate water. Water helps maintain the moisture of the lining of the Internal organs of the body. Water also maintains normal volume and consistency of fluids such as blood and lymph. It removes "Poisons" or "Toxins" from the body through urine stools, sweat and breathing. Some people suffer from constipation because their intake water is to insufficient. The water intake should be three to four liters in summer and one two liters in winter. Two glasses of water taken in the morning immediately after waking up can remove constipation. Severe dehydration from any cause may be followed by constipation. A spastic colon which abstracts an undue amount of water from the faecal mass may also be the cause. Defective movement also occurs from hypothyroidism which is often associated with constipation.

4. Use of Narcotics

A person falls ill by taking narcotics in excess which are poisons i.e., tea, tobacco, opium, zarda. These damage

the walls of stomach and intestine, benumb the nerves and glands and disturb the circulatory system. The gross result is constipation. Many common Allopathic medicines have side effects. They reduce peristalsis and cause constipation.

5. Pregnancy

Pregnant women experience restricted bowel movement and during pregnancy there is decreased peristalsis due to progesterone---a hormone which relaxes muscles of the large intestine. In pregnancy constipation can be due to changes in dietary habits and due to mechanical compression and displacement of large intestine by the womb. Constipation can also occur in pregnancy due to tension and anxiety.

6. Use of Common Medicines

Most of the Allopathic drugs have side effects. Some common medicines also cause constipation. These are painkillers, nonsteroidal antiinflammatory medicines and medicines for diarrhoeas. Sometimes anaesthetic agents (medicines that cause partial or complete loss of feeling) may cause constipation. Medicines for high blood pressure and depression has caused constipation to some patients. Drugs do achieve something but thereafter they accumulate in the nerve--centres. The crude portion gets excreted with stools and urine while its finer portion remains to create Irritation to the cells. This naturally means over-action and depression to the cells when they are inactive, there is constipation. Not only drugs some common ailments and disease can also cause constipation. Brain Tumors, can cause constipation. Parkison's disease which results in involuntary movements such as tremours, stroke with paralysis, injury to the spinal cord, multiple sclerosis, muscle rigidity, difficulty in chewing, swallowing and speaking can also cause constipation irritable bowel

syndrome is a chronic disease, the symptoms of this disease are pain in the lower part of abdomen, small hard stools a feeling of incomplete evacuation after excessive straining a bloated sensation in the abdomen heart burn, nausea, and backache. Some people with irritable bowel syndrome have alternate constipation and diarrhoea. Anxiety increases the severity of the symptoms. Generally purgatives are taken for constipation when purgatives or laxatives pass through the digestive tracts, they produce, by chemical reaction, new liquids which flush the colon and the stool adhering to it are voided in liquid form. But such substances are habit-- forming and a chronic patient will ask for more and more effective purgatives.

7. Tension and Stress

Emotional stress, anxiety and tension decrease peristalsis. In addition people with stress like to eat low fibre diet, often at irregular timings. This disturbs the digestive system. It also results in constipation with women premenstrual tension occurs upto 10 days before the menstrual cycle. During this period a girl shows the symptoms as Headache, Nervousness, Irritability, Depression, fatigue and constipation. Moreover stress, internal or external has adverse effects on the correct functioning of the body. These influences include physical factors such as disease or injury of mental one particularly anxiety. In such conditions symptoms such as indigestion, insomnia, irritation and constipation may develop.

8. Bad Posture

Constipation can occur if there is wide gap between the thighs and hips while passing the stool. This often happens when one is asked to use western type of toilet people who are used to Indian toilet feel uneasy and uncomfortable when they use western type of toilet.

9. Old age

The wear and tear of tissues and nerves takes place with the advancement of age. In old age those people who do not have teeth and they cannot chew the food properly. Moreover the activity of Intestines decreases and the muscles of the abdomen weaken. This causes constipation.

10. Hirschsprung's diseases

It is a disease known after Harold Hirshchsprung, a great physician of the nineteenth century. This disease is called congenital megacolon. The disease implies a condition of extreme dilation and hypertrophy of the colon generally this disease is attributed to Heredity. According to the disease the nerves in the rectum and sphincters of the anus become too weak to function and this causes constipation.

11. Deviation from the Normal

During touring and travelling in the routine diet and activities are disturbed. This deviation from the routine disturbs the normal diet and restricts the movements. This deviation can cause constipation.

12. Lack of Exercise

The muscles controlling the movements in the Intestines, the colon especially become weak and lack the essential power to move the faecal that normal evacuation is delayed. The practice of yoga relieves constipation. Asans increase peristalsis and strengthen abdominal and pelvic muscles.

3

The Yoga System

"As the different streams having their sources in different places all mingle their water in the sea, So O Lord, the different paths which men take through different tendencies, various though they appear crooked or straight, all lead to Thee".

—Swami Vivekananda

Since Time immemorial, there has been a gradual evolution in religious Ideas and in religious practices. Man everywhere is stuck with wonder and awe at the majesty and orderliness of the universe in which he finds himself a tiny speck. Evolution has its full play in the field of religious practices. Beliefs and practices are subjected to the test of reason so as to discard some and modify many others. The most evolved forms of these practices have culminated in the yogic practices. The sages of India have bestowed a lot of attention and deep thought to this mysterious development in man. They have come to the conclusion that the source of this mysterious and marvellous manifestation is in man himself, and did not come as a gift from outside. Another great discovery made by the ancient Rishis and yogis was that the pace of the wonderful manifestation and unfoldment can be accelerated by certain mental exercises and methods of discipline which make men go within their own selves instead of going outside towards the sense objects. Tests were applied to the

efficacy of these disciplines, principles and practices in the form of different kinds of yoga. Although all yogas have common aim, each kind of yoga takes the constitutional differences in man into consideration. Some men are predominantly emotional and feel the woes of suffering humanity. Other are predominantly intellectual and possessed with the curiosity to know more about themselves. Thus have evolved the different system of yoga called Karma Yoga, Bhakti Yoga, Raja Yoga, Hatha Yoga, Kundalini Yoga, Mantra Yoga, Tantra Yoga, Shiva Yoga, and Surat Shabad Yoga. All these kinds of yogas have been discussed in "Perennial paths of yoga". Here we are concerned mainly with Hatha Yoga.

Today, no branch of yoga is more popular and at the same time more misunderstood and misapprehended than the Hatha yoga. Its popularity is due to its insistence on health and this is also the main cause of misapprehension because the close affinity between the abdominal function and emotional reaction is ignored. Hatha Yoga is the name given to the technical practices and disciplines by which the body and the vital energies can be brought under control. Although but one of the means of yoga, it is the first preparation towards the way of re-integration essential for further realization. The syllable "Ha" represents the sun and the syllable "Tha" represents the moon and the conjunction (union) of the sun and the moon is Hatha Yoga. In man cosmic principles appear mainly under two forms the one in the subtle body, the other in the gross body. In the subtle body, they appear as two channels along which our perceptions travel between the subtle centre at the base of the spinal cord and the centre at the summit of the head. These two channels are called Ida and Pingla. Ida situated on the left side, corresponds to the cold aspect or moon, and pingla on the right side, to the warm aspect or the sun. In the gross body the lunar and solar

principles correspond to the respiratory cool and the digestive warm, vital energies and are called prana and Apana. It is by coordinating these two most powerful vital impulses that the yogi achieves the aim. The two First steps of Hatha Yoga. (The five abstinence or yamas) when starting on the journey of yoga, it is the first essential to bring the body and the mind to the highest possible peak of health and efficiency. The first stage of Hatha Yoga is the practice of the abstinences and observances which eradicate all physical and mental ailments and create perfect physical and mental welfare. According to Patanjali, "The abstinences are non-violence, truth, non-stealing, chastity and non-possession". The third step of Hatha Yoga (The Asans). Before mental concentration is attempted, the body must be placed in a favorable and comfortable position and one in which it can remain for a long time. Many of the bodily postures are therefore associated with different beings and animals. The bodily postures help to strengthen the body and stabilize the mind. That posture in which a man can remain longest without effort is for him the best. The very word Asans means easy, comfortable seat. The theorapatic uses and importance of Asans have been discussed in the chapter Asans.

The Bandhas and Mudras

In most of the Postures, certain muscular contractions are necessary to bring the vital energies under control. These muscular contractions are called, "ties" (bandha) and the most important of them three in number, are the root contraction, or mulla bandha, the net-holding contraction is Jallandhar-bandha. These contractions are sometimes counted amongst the gestures (Mudras).

1. The Root Contraction (Mula Bandha)

It is the most important and is to be maintained constantly during breathing exercises. It consists in powerfully contracting the upper part of the arms, drawing it inwards and releasing it periodically. This diverts the excreting energy which dwells in the basic centre above the anus, from its downward trend and makes it the support of the vital breath for its upward motion. By performing this contraction, the union of the excreting and respiratory vital energies (Prana and apana) is realised and the yoni gesture is performed automatically.

2. The Net-Holding Contraction (Jalandhar Bandha)

The chin should be pressed on the chest closing the net of arteries of the neck. This is called the Net-Holding Contraction. The purpose of this contraction is to prevent the ambrosia which flows from the lotus of a thousand petals at the summit of the head from being devoured by the digestive fire which dwells in the navel of all beings. The net-holding contraction protects the ends of the nerves from the brutal pressure of the air while holding the breath. The contraction is so named because of its connection with the centre of Extreme-purity and the network of nerves that it commands.

3. The flying Contraction (Uddiyan Bandha)

This consist in strongly drawing in the belly at the level of the navel and then releasing it. This gives support to the lungs during breathing exercises and has a beneficial effect on the health by balancing the various elements of the body. The flying contraction is so called because it causes the life breath to fly into the central artery of the subtle body.

The Gestures or Mudras

To help and accelerate the effect of the postures and breathing exercises, the science of re-integrations provides a certain number of technical psycho-physical-process called "The Gestures". There are many gestures used in yoga. The main gestures are twenty five in number.

1. The arch gesture (Maha Mudra).
2. The sphere of space gesture (Nabhi Mudra).
3. The arch contraction (Mahabandha).
4. The gesture of great perforation (Mahvedha Mudra)
5. The gesture of moving-in-the void (Khechri Mudra)
6. The gesture of inverted action (Viparita Karma Mudra)
7. The yoni gesture (Yoni Mudra)
8. The gesture of the thunderbolt (Vajrali Mudra)
9. The instigator-of-energy gesture. (Shakti Chalam Mudra).
10. The deep pool gesture (Tadagi Mudra).
11. The frog gesture (Mandanki Mudra).
12. The gesture of the giver of happiness (Shambhavi Mudra).
13. The horse gesture (Ashvani Mudra).
14. The gesture of nose-holder (Pashini Mudra).
15. The She-Crow gesture (Kakimudra)
16. The She-Elephant gesture (Matangi mudra).
17. The She-Snake gesture. (Bhujagini Mudra).
18. The gestures of the fine holds (Panch Dharana).
19. Watery (Ambhvi).
20. Luminous, fiery (Vasihavanari).
21. Aerial (Vayvi).

22. Ethereal (Akashi).
23. Root contraction (Moola bandha).
24. Net-Holding contraction (Jallandhar Bandha).
25. Flying Contraction (Uddiyan Bandha).

The Six Purification Acts (Shat Karmi)

In the normal course of life, the nerves, the arteries and all other channels of the body gradually harden and become obstructed by sediments and impurities which are the cause of ageing and most physical and mental ailments. The first work in the practice of yoga is to remove these sediments through the purification and rejuvenation of first the grosser, then the subtler channels of the body. The chief means of purifying the body are rhythmical breathing accompanied with holding of the breath and the uttering of certain syllables called the "Seed formulae" (Bija Mantras). The six acts (Shat Karma) are the washing out the stomach (Dhauti) washing out the bowels (Vasti), cleansing of the nose (Neti). Shaking the abdomen (Nauliki), fixing with the eyes (Trataka) and breathing bellows (Kapal Bhati) without these six acts, it is often difficult to find the physical strength and resistance necessary for the practice of yoga.

The fourth step of Hatha Yoga (Breath Control) or pranayama). Pranayama is valuable exercise for bowels, kidneys and lungs. Breathing is the main source of absorbing energy from atmosphere. It gives liberal supply of oxygen to the circulating blood current throughout. Prana is working inside as well as outside our body. Gross prana moves through the physical body and psychic prana moves in the Ida, Pingla and shushuma. Different types of breath control have been discussed in the chapter pranayama.

The fifth step of Hatha Yoga (Pratyahara). When the senses have been with drawn from their objects and transmuted themselves into the modes of consciousness, this is called pratyahara. The process of withdrawal consists in disentangling the senses, sight, hearing etc. from the objects of their natural perception always linked with the opposing tendencies of attachment and aversion. This withdrawal is attained by power of discernment which deprives the senses of their unworthy food and masters the movements of the mind's substances. It is through "with drawal" that complete control over the senses is gained. It purifies the mind, increases austerity (tapas), gives self confidence and freedom from illness.

The sixth step, concentration (Dharana). Dharana means concentration which is focussing the mind on a single object without diversion. Having gone through the outer stage, i.e., the process by which the body and all the physical and mental obstacles are controlled. The practitioner is now ready for "the inner stage". The inner journey towards reintegration. It is through concentration that the movements of the mind are stilled. Preparation for concentration is through practice and detachment.

The seventh step is contemplation (Dhyana). To keep the mind solely on one object is contemplation. Contemplation is that state in which the tendencies of the concentrated mind begin to flow around one single notice like an uninterrupted stream of oil, and the mental faculties (manas) remain without any outward object. Contemplation is of three kinds: material (sthul dhyana), luminous (jyotir dhyana) and subtle (sukshma dhyana).

The eight step: Identification (Samadhi). Samadhi literally means "Completely in agreement". It is also

called "Samapati". It is supper-consciousness, cosmic consciousness. This differs from person to person

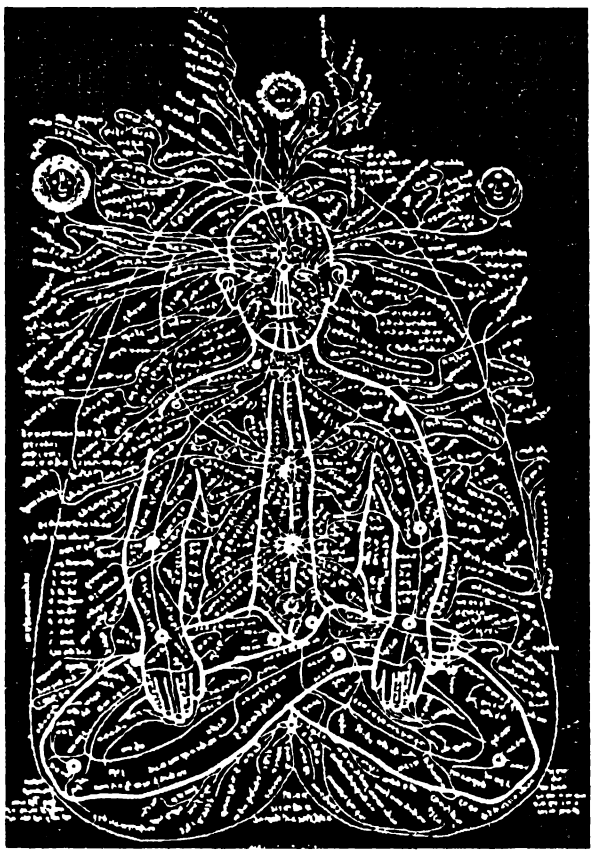


Fig. 3.1: Pranayama Vibrations

according to his stage of evolution. It is a stage when the mediator, meditation and the meditated become one. It is a state of Bliss and oneness with immense being. Patanjali says, "When alone the object of contemplation remains and one's own form is annihilated, or "Samadhi". Patanjali has mentioned samprajnata and Asam-pranjnata samadhi. In sampranjnata samadhi mind is retained in its purity and refinement. In

Pranjnata samadhi thoughts disappear in the first stage. Perfect thinking remains. Thinking also vamishes in the second stage and the state of complete vacum remains. Patanjali also mentions about unconscious sabija samadhi in which unconscious is there but mind is dropped consciously. The second and higher stage is Nirbija samadhi where seed is also finished from the unconscious and there is no possibility of its coming back as there is no seed which can sprout and flower. Swami Vivekananda in his "Raja Yoga" has classified samprajnata samadhi in four varieties.

a. Savitarka: With question (i.e., sound, meaning and resulting knowledge being mixed up) Concentration of external gross elements. The state of assuming Identification with gross material objects like a crystal which takes up the colour of surrounding objects.

b. Nirvitarka: Without question (devoid of qualities, Expressing only the meaning) Taking the objects out of time and space and thinking of them as they are. Knowledge of name and meaning also fade away and only the form without name and meaning remains.

c. Savichara: With discrimination take Tanmantras as object and think of them in time and space.

d. Nirvichara: Without discrimination eliminates time and space and thinks of five elements, only the abstract without its name and meaning subsists. Samadhi is the ultimate aim of all methods, religions and yogas. It is meant for all. According to patanjali Dharana, Dhyana and Samadhi take the practitioner into the inner most recesses of his soul. By profound meditation and knowledge and the known become one. The seer, the sight and the seen have no separate existence from each other.

Yoga has its own therapy which is a specialized form



Fig. 3.2: Prāṇayama Kośa

of yogic culture. It is different from the medical system because in it the external agent. (Medicine) does not play the primary role of restoring health of the patient. It is the patient himself whose personal understanding. Constant and careful practice cure his disease in the yogic system. Yoga therapy doesn't aim at merely providing a superficial relief of symptoms and signs of diseases. This therapy leads to an integrated and complete cure of the five constituents i.e., panch koshas

of human beings, Annamaya Kosh. Gross physical body, Pranayama kosh pranic sheath, Manomaya Kosh, Subtler psychic sheath, Vinamaya Kosh, Power house of intelligence and finally Anandmaya kosh, Divine gossamer. Since this therapy leads to an integrated and complete cure of the five constituents of human beings it requires the knowledge of anatomy, physiology and psychology Hatha Yoga has mainly physico---physiological approach.

Hatha Yoga lays emphasis on bodily purification through Eliminative process. Yoga therapy has three steps:

1. Yogic Diet,
2. Yogasans and Pranayama,
3. Yogic Principles and Yogic Cleansing.

All these will be discussed in detail in the chapters that follow.

4

Yogasanas

Asans occupy very important place in Hatha Yoga. Some people have this wrong notion that Asan means yoga and yoga is concerned mainly with Asan. Asan is one aspect of yoga. The word Asanas means a comfortable seat. The bodily postures help to strengthen the body and stabilise the mind. That posture in which a man can remain longest without effort is for him the best. Different asans are described in detain in different books of yoga. "Hatha Yoga Pradipika" describes 14, "The Yoga Pradipika" 21, "The Gheranda Samhita" 32, "The Vishava Kosha" 32, "The Anu Bhava Prakasha" 50. All however agree that the number of the chief postures is 84. If pure physical exercises have only a physical effect on the muscles and bones. Yogasans aim at the harmonious development of body mind and soul. Different asans have different effects on the organs of the body. In our body organism cells tissues and glands play a vital role. One diseased gland can affect the whole system. The main organs concerning digestive system, the stomach, small intestines, pancreas, and liver are affected by the proper functioning of the abdominal muscles particularly of the diaphragm. With the regular practice of asans, the abdominal muscles regain in their elasticity and rejuvenate other organs of the digestive system. Asans are not to be done at random or according to one's fancy or whim. Asan has a specific aim. Concentration, sequence and breathing are to be kept

in mind while doing asans. Every practitioner of asans must keep in mind some basic principles before starting asans. Asans must be practised regularly and punctually with firm determination and tenacity and without any interruptions and distractions. It is much convenient and hyenic to practise asans in the morning, first washing your teeth and mouth, evacuating the bowels. Asans should not be done with tight dresses or garments on the body. Spectacles, watches, rings waist belt, boots, braziers, should be removed while doing asans. Asans should not be done after meals. Asans should be done in a quiet, calm, seculded place in the open space. In unpleasant or rainy weather the Asans may be done in an airy room or verandah free from mosquitoes, flies, ants and bugs. The asans should be done on a folded blanket or soft carpet laid on the floor. During the practice of asans and pranayama no strain or jerk should be felt in the facial muscles, ears and eyes. Except in the case of simhasan the eyes and mouth should remain closed during the practice of asans. After doing each asan, rest must be taken for a couple of minutes. While doing asans the body should remain active and mind free from tension, worry, anxiety and unholy thoughts. After doing all asans, Shavasana (The Corpse Pose) must be done for a couple of minutes. Shavasana is an excellent asan for removing physical and mental fatigue and strain.

Caution

Persons suffering from Heart ailments, Blood pressure, Stomach ulcer, Hernia Spinalaches, mental ailments should not do the following asans:-

Sarvangasan, Shershasan, Chakarasan, Halasan, Uttita Padamasan, Bakaasan, Matsyaasan, Mayurasan, Jallandar Bandha, Uddiyan Bandha, Paschimotasan, Kukkutasan and Vrischikasan. There are other specific asans for specific ailments and diseases women during the period of conception, menstruation, pregnancy or

any female disorder should not do any asan except Jeytiskaasan and Shavasan. Persons suffering from Asthma, Tuberculosis, Leprosy, Arthritis, Diabetes, abdominal disorders and hyperacidity should not practise these asans. There are different asans with curative and preventive effects for different diseases. All intoxicants including bidi, cigarette smoking, wine, charas, opium should be shunned by the practitioner of asans. Faulty breathing can be harmful.

Regular practice of asans and pranayama with faith and perservance will change the out look of the practitioner and he will find himself a changed man. The practitioner's own frame of mind, his determination and efforts will determine his success in the practice of yoga and will give him vim, vigour and vitality. The asans cannot be a substitute for medical treatment. All the asans should not be done in one sitting or one session. It has been observed that some beginners feel discouraged when they are not able to do some asans correctly consequently they leave the Idea of doing asans. They should not feel discouraged. Practice alone will make them perfect. They should always remember the advice of the greatest and brightest sage Patanjali, "The young, the old, the extremely aged, even the sick and the infirm obtain perfection in yoga by constant practice".

Persons suffering from constipation are required to do the following asans taking two or three glasses of water or a cup of milk.

1. Siddhasan

Technique

Sit on the folded rugged or folded blanket on the floor, bend the left leg and pull the foot in against the groin. Now bend the right leg and bring the foot across and insert its outer edge in the crevice between the calf and



Fig. 4.1: Siddhasana

thigh of the left leg. The right heel should press against the pubic bone and both the knees should firmly touch the floor. Keep the palms of the right and left hands on the right and left knees. Sit upright keeping the head and the back in a straight line. For variation, change over the legs regularly. Place the heels near the groin carefully lest the pubic bone should be hurt.

2. Simhaasan

Technique

Sit on the folded blanket with legs stretched straight in front. Raise the seat, bend the right knee and place the right foot under the left buttock. Similarly bend the left knee and place it under the right buttock. The left ankle should be kept under the right one. Sit on the heels with toes towards backwards and put the weight of the body on the thighs and knees. Stretch the trunk forward and keep the back erect. Place the right and left

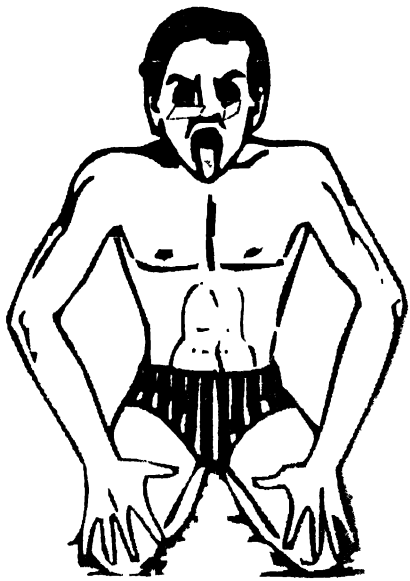


Fig. 4.2 : Simhasana

palms on the right and left knees. Stretch the arms straight and keep them rigid. Then spread the fingers and press them against the knees. Open the mouth and eyes wide and protrude the tongue out and down as far as you can. Gaze at the centre of the eye brow or at the tip of the nose. Remain in this pose for a couple of seconds. Breathe through the mouth.

3. Padamasan

Technique

Sit on the folded blanket with your legs outstretched. Bend each leg and place each foot on the opposite thigh, soles turned upwards. Pull the foot as high as you can. Keep the palms of the right and left hand on the right and left knees, touching the thumb with tips of index fingers and gaze at the tip of the nose. Keep the head,



Fig. 4.3 : Padmasana

neck and spinal column straight and erect and breathe slowly.

4. Baddha Padamasan



Fig. 4.4 : Baddha Padmasana

Technique

On a folded blanket, adopt the pose of Padamasana. Cross the arms behind the back and grip the toes of the right foot with right hand and the toes of the left foot with left hand. The chest should move forward. Breathe slowly and freely. Remain in this pose for a couple of minutes. Come to the original position and relax.

5. Parvatasan

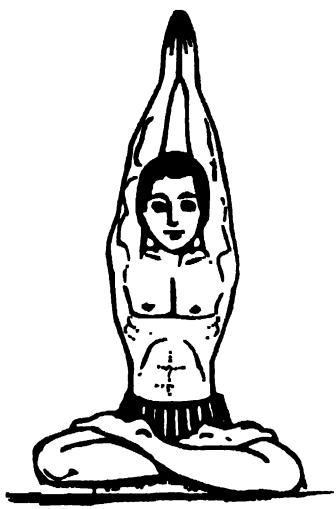


Fig. 4.5 : Parvatasana

Technique

Sit on a folded blanket, adopt the pose of Siddhasana and gaze on a white spot on the floor. Stretch your hands upwards, and keep the neck, spine in straight line. While raising your hands upward breathe in and retain breath for a couple of seconds and while bringing hands down breathe out. Do this asan at least for ten times.

6. Garudasan



Fig. 4.6 : Garudasana

Technique

On a folded blanket stand upright. Bend the left knee slightly and twist the right leg over the left leg so that the right in step is touched behind the left calf. The arms should remain crossed in front of the chest so that the left elbow rests on the right biceps against the elbow joint and the left fist is kept above the right twist in front of the face. Remain in this pose for 20 seconds and breathe slowly. Then repeat the pose balancing of the right leg and reversing the arms and the leg position. Gaze at a visible white spot or point. Come to the original position and relax.

7. Moola Bandhasan



Fig. 4.7 : Moola Bandnasana

Technique

Adopt a sitting position on a folded blanket, stretch the legs forward and bend the knees bringing the feet together at the perineum. Breathe slowly and comfortably. Raise the body on the heels so that the heels press the perineum. When you feel strain in the legs, come to the original position and relax.

8. Dhanurasan

Technique

Lie flat on the stomach and chest fix the legs bringing the feet back towards the head. Raise the legs, head and upper part of the body. While arching the back, take hold of your right ankle with your right hand and left ankle with left hand. Breathe slowly and normally. Remain in this pose for a couple of seconds. Return to the original position and relax.

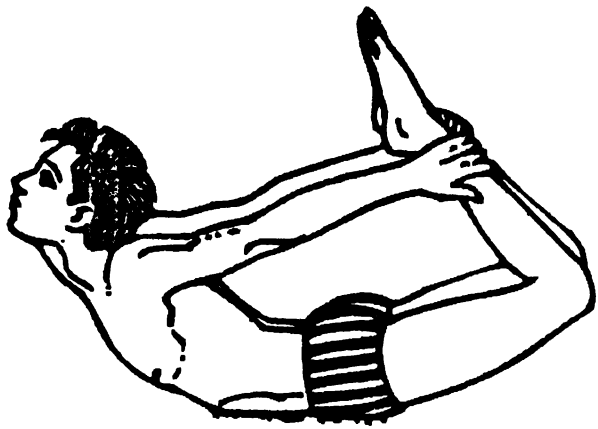


Fig. 4.8 : Dhanurasana

9. Mayurasan

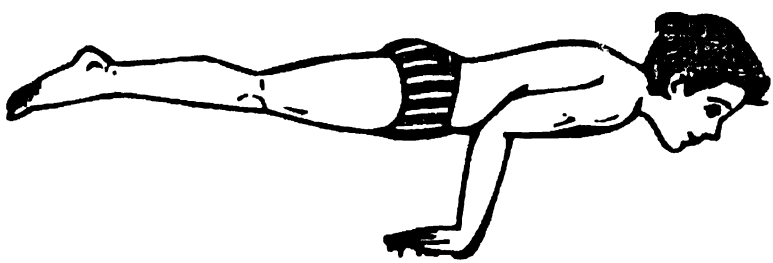


Fig. 4.9 : Mayurasana

Technique

On a folded blanket kneel down. Join the two arms together and rest the hand on the floor, palms down with fingers pointing towards the toes. Keep the hands firm. Bring down the abdomen slowly against the joined elbows support your body on your elbows. The stretch your legs. Inhale and raise the legs together from the floor. Remain in this pose for a couple of seconds. Exhale while raising the body of the floor and inhale while lowering the body.

10. Sarvangasan

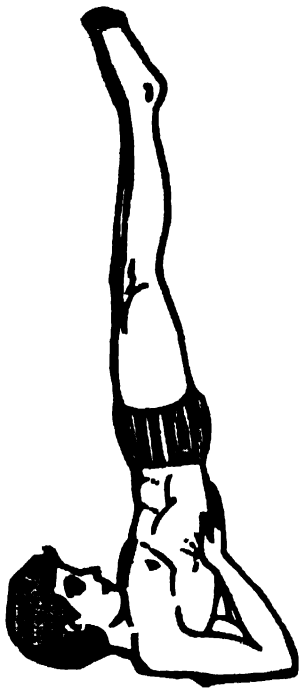


Fig. 4.10 : Sarvangasana

Technique

Spread a blanket on the floor and lie flat on your back. Then slowly raise the legs up lifting the trunk and hips vertically. The hips be supported by both hands. Let the elbows rest on the floor. The chin should be firmly pressed against the chest. In this pose the hinder part of the neck should touch the floor and trunk and legs should remain straight. Remain in this pose for a few minutes and breathe slowly and deeply and concentrate on the thyroid gland which is at the root of the neck. Return to the original position very slowly and relax.

11. Halasana



Fig. 4 Halasana

Technique

Spread a folded blanket on the floor and lie flat on the back with arms straight near the body, palms facing downward. Keeping the legs straight raise them slowly above the head. Only stomach abdominal muscles should be used to raise the legs. Bend the trunk upward hips first and slowly lower the legs over the head till the toes touch the floor. Keep the legs straight. Now interlock the fingers and stretch the arms. The legs and hands are stretched in opposite direction. Breathe slowly without any strain. Remain in this pose for a couple of minutes. Return to the original position and relax.

12. Pavanmuktasan

Technique

Spread a blanket on the floor and lie down straight on the back. Keep both the hands close to the body. Inhale slowly and lift right leg up as much as you can without any jerk or strain and keep the left leg straight on the floor. Bend the right knee and bring it close to the chest holding the leg firmly with two hands by interlocking the fingers. When the legs are bent the air

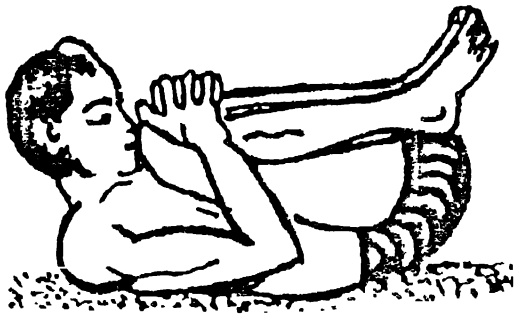


Fig 4.12 : Pavanamuktasana

should be exhaled completely. Then press the abdomen walls, raise the head up and touch the knees with the tip of your nose. Then hold the breath and keep the head on the floor. Repeat the same process with left leg and relax.

13. Bhujangasana

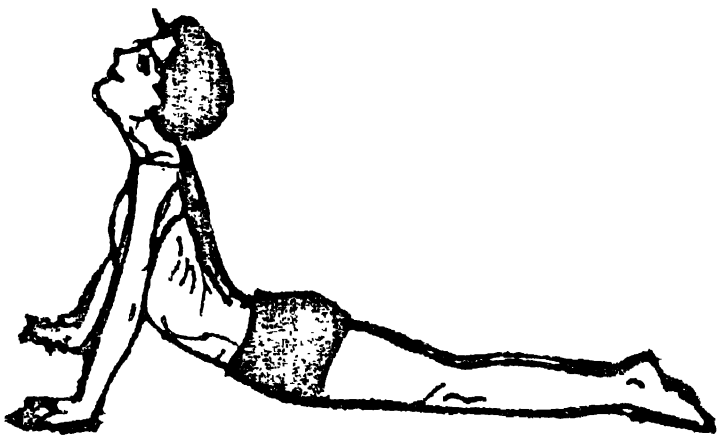


Fig 4.13 : Bhujangasana

Technique

Lie flat on the stomach with legs straight and the feet extended. Place the hands, palms down under the shoulders. Slowly raise the body the navel until the arms are straight but the stomach and the legs must touch the floor. Bend the head back gazing diagonally upwards. Remain in this pose for a couple of seconds. Breathe slowly and normally throughout.

14. Konasana

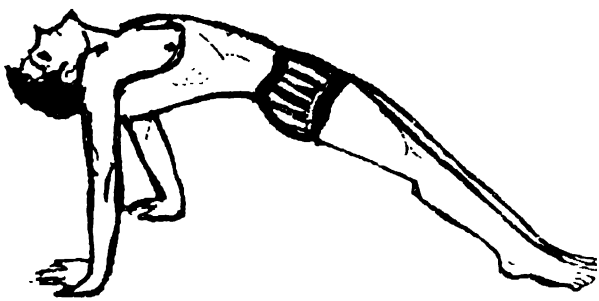


Fig. 4.14 : Konasana

Technique

Lie down on a blanket with face upwards raise the legs and hands and maintain balance of the body on your leg and hands. While raising the body upwards inhale air and retain breathe for a couple of seconds. Exhale breathe slowly and rhythmically while keeping the body down. The pose of this asan lies in retaining of breath. Relax for a couple of minutes.

15. Utthita Padamasana

Technique

On a folded blanket, sit in Padamasan and place palms of both the hands by the sides. Now raise the body

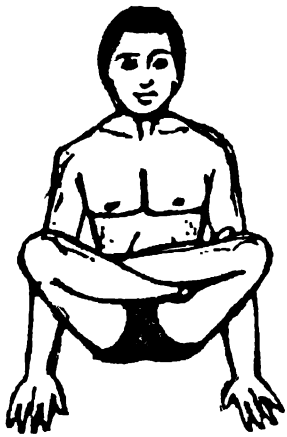


Fig. 4.15 : Utthita Padmasana

up on the hands by applying pressure on the shoulders. Keep the eyes open and look straight. When the body is sufficiently raised inhale breath slowly and retain the body on the floor for a few seconds. Then slowly lower the body on the floor and exhale breath.

16. Naukasana

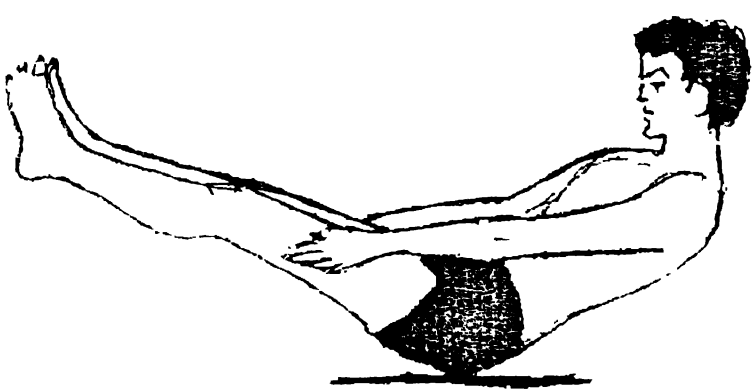


Fig. 4.16 : Naukasana

Technique

Lie flat on the floor facing the sky with hands clasped at the back. Raise your feet, head on the chest up as to form a curve on the floor. With your body rest on abdomen. In this pose the body looks like a boat. Breathe slowly and rhythmically. Remain in this pose for couple of minutes, and rock the body from one side to another like a boat.

17. Supta Vajrasana



Fig. 4.17 : Supta Vajarasana

Technique

Sit on the folded blanket with buttocks on the floor between the heels in Vajrasana posture. Exhaling lean back slowly and lower the elbows to the floor. Support the trunk for a couple of seconds on the elbows and forearms. Fold and lock the arms above the head. Lie for a couple of seconds in this posture and breathe slowly and deeply. Then sit up again supporting on the elbow and feel relaxed.

18. Salabasana

Technique

On a folded blanket on the floor, lie prone on the stomach and chest. The forehead and the chin must

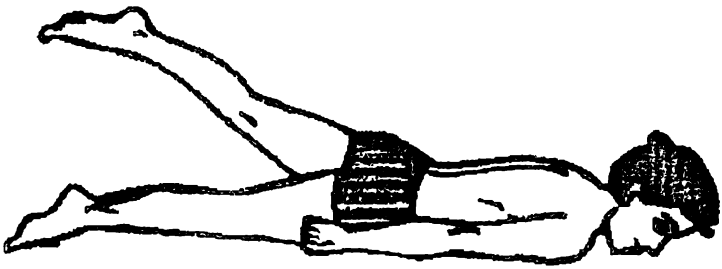
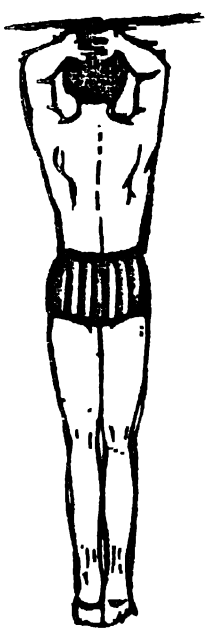


Fig. 4.18 : Salabasana

touch the floor and keep arms alongside the body and legs extended together. Take a deep breath. Clench the fists tightly and raise the legs together as high as possible without bending them. Exhale breath and bring the legs slowly to the floor. Remain in this pose for a couple of seconds. Return to the original position relax.

19. Sheershasana



4.19 : Sheershasana

Technique

On a folded blanket, place a folded towel, adopt vajrasan pose. This asana is performed with the help of the hands and arms. The whole weight of the head, trunk and body is placed on the intertwined hands and elbows. Lift the knees off the floor and raise the buttocks until the legs are straight. When the balance has been maintained, raise and strengthen the hips so the thighs move up. Lower the legs very slowly without any jerk to the floor come to the original position. After completing the asana stand erect for a minute.

20. Padangustasana



Fig. 4.20 : Padangushtasana

Technique

On a folded blanket, sit on the feet and up the whole weight of the body on toes. Place the left toe in the centre of the anus and place the right foot over the thigh near the knee and maintain balance on the right toe. Place the hands on the sides of hips. Retain the breath as long as you can. Breathe slowly and rhythmically. Gaze steadily on any white spot in front of you. Return to the original position and relax.

21. Chakrasana

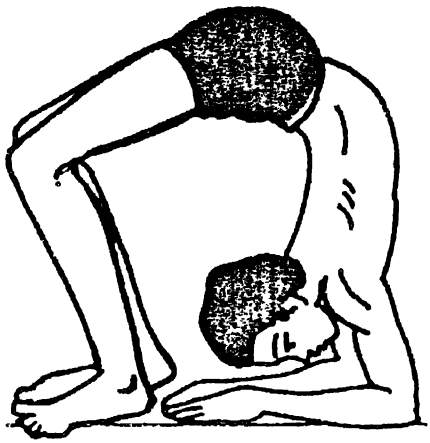


Fig. 4.21 Chakarasana

Technique

Lie down on your back, bend the knees and touch the buttock with heels. The feet should be about one foot apart. Place the palms on the floor with the elbows pointing upwards. The palms and fingers should rest squarely on the floor. Supporting the weight of your body on your hands and raise your hips and abdomen as you can. Let the entire body appear like a wheel with feet and hands touching the floor

22. Paschimotasana

Technique

Lie flat on the blanket and stretch the arms over the head and breathe in slowly and normally. Raise the arms, head and trunk, exhale and bend them over the legs without raising the knees. Catch hold of the toes with



Fig. 4.22 : Paschimottanasana

fingers, contracting the abdomen and gently pressing the head against the knees. Pull the toe with the arms and lower the elbows. The bending should be done very slowly. Remain in this pose for a couple of seconds and increase the time gradually. Return to the original position and relax.

23. Matsyasana

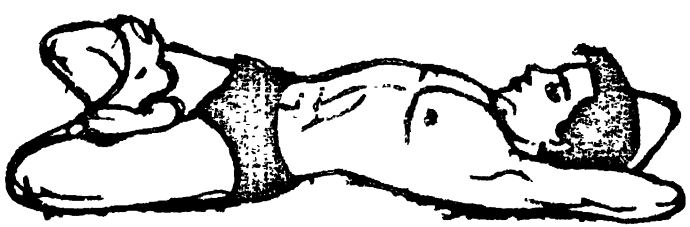


Fig. 4.23 : Matsyasana

Technique

Sit in the Padamasana posture. Lie back keeping the locked legs down on the floor. Support the body with the hands and elbows. Lift the head and the shoulders and arch the back pressing the crown of the head on the floor forming a bridge in which the shoulders and the back remain above the floor. Grasp the toes with both hands.

Breathe deeply, expanding the rib carefully. Remain in this pose for a couple of minutes. Return to the original pose and relax.

24. Yog Mudra

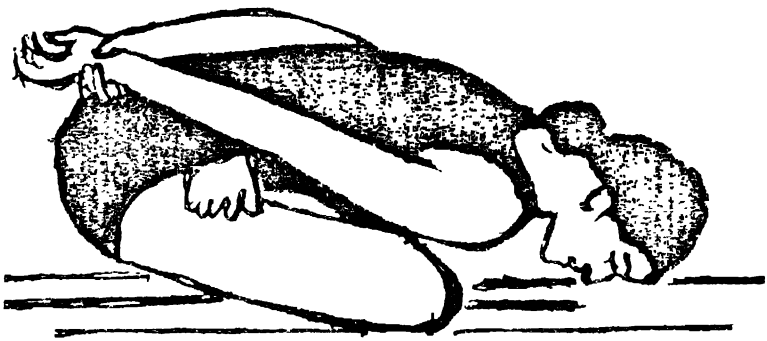


Fig. 4.24(a) : Yoga Mudra

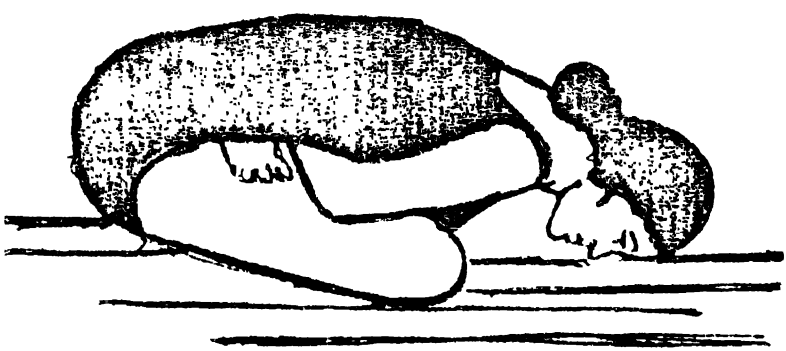


Fig. 4.24(b) : Yoga Mudra

Technique

Sit on folded blanket in Padamasana pose. Relax the whole body and close the eyes. Place the hand behind the back catching hold of the left wrist in the right hand and keeping the spinal column erect, inhale and exhale slowly leaning forward touching the floor with forehead. Stay in this posture for as long as you can without any stress or strain. Focus your attention on the abdominal region. Then breathe in slowly and rhythmically. Sit upright and relax.

25. Mandukasana

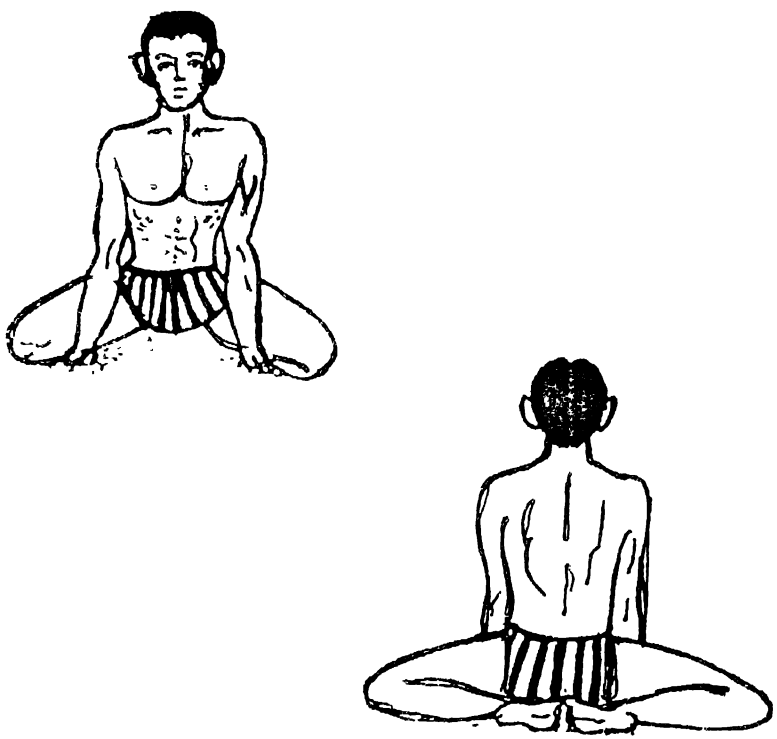


Fig. 4.25 · Mandukasana

Technique

On a folded blanket, sit in any easy posture, keeping the feet together. Separate the knees as far apart as you can without any pain, strain or jerk. Keep the big toes of both feet touching. Place the hands on the knees. Remain in this pose for a couple of minutes and breathe slowly. Return to the original position and relax.

26. Gomukhasana



Fig. 4.26 : Gomukhasana

Technique

Sit on a folded blanket on the heels, knees together and head, neck and spine straight. Bend the right arms raise the elbow and lower the hand as far down the middle of the back without disturbing the upright posture. Bend the left arms and bring the left hand up the centre of the back until the fingers of both hands interlock. Breathe deeply. Remain in the pose for a couple of minutes. Unlock the hands and repeat the process in reverse manner. Return to the original position and relax.

27. Jyestikasana



Fig. 4.27 : Jyestikasana

Technique

Spread a blanket on the floor and adopt the pose of Advasana. Interlock the fingers and place the palms at the back of the head. Breathe slowly, deeply and rhythmically. Relax the whole body.

28. Shavasana

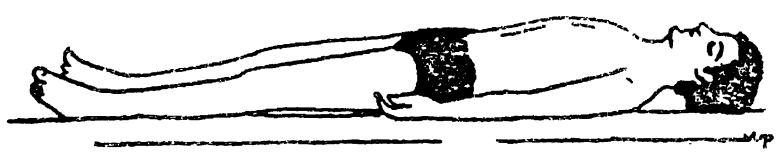


Fig. 4.28 : Shavasana

Technique

On a soft carpet or blanket lie full length on back with arms away from the body with palms facing upward and feet slightly apart. Simply lying on the floor. The technique of this asana must be followed carefully. Rhythmic and deep breathing are absolutely necessary for concentration which gives complete relaxation. Have deep and long breathe. Retain breath for a couple of seconds, then exhale.

5

The Science of Breathing

Of all functions of the body, breathing is of greatest importance. To breathe is to live and to be alive is to breathe. Man can live for weeks without food and several days without water but without air man cannot live for more than a couple of seconds. Yogis measure life not in terms of number of years but the number of breaths taken. Modern civilised man does not know how to breathe. Our unnatural living conditions, stuffy and suffocating apartments, cramped working conditions in factories and offices faulty and wrong methods of walking standing and sitting have robbed us the rhythm of life and of natural and correct breathing. The result is that millions and millions of men and women and children have narrow shoulders. Man's mental power, happiness, vitality, resistance, self-control can be increased by the correct art of breathing. Expansion and control of breath is called pranayama---- the important aspect of yoga The terms respiration and breathing are often confused. Respiration is a term applicable to all living organisms. Breathing inhaling air into and exhaling air into and exhaling it from the body. A baby starts breathing immediately after its birth, the moment placenta is cut from its body. Respiration, however takes place in the embryonic stage long before birth. Deep and correct breathing feeds the body's tissues organs and glands with oxygen. Removes much of body waste and

Impurities. There is close relationship between emotions and breathing. When we are excited or agitated our rate of breathing becomes rapid. When we are composed, our breathing is slow, calm and rhythmical. The ancient, yogis discovered pranayama (The science of breath). Prana is vital force, prana is much more than mere breath. Prana is the power behind and within breath. It is the vital force in every thing. It is cosmic energy that pervades the whole universe. It is present in all forms from lowest to the highest from the ant to an elephant. It is due to prana that digestion excretion and secretion take place. The impurities of body and mind can be removed by the practice of pranayama. The prana in the air performs number of functions in the human body. Each of these has a specific name and aim.

1. Prana:- It circulates in the area around the heart and controls breathing.

2. Apana:- It circulates in the lower regions of the abdomen and controls excretory function (urine and faeces).

3. Samana:- It stimulates the gastric juices and aids digestion.

4. Udana:- It remains in the thoractic cage and controls the absorption of air and food.

5. Vyana:- It is spread throughout the body and distributes the energy from food and breath.

6. Naga:- It relieves abdominal pressure by provoking excretion.

7. Kurma:- It controls the eyelids to prevent foregin bodies from entering and dazzling light from harming the eyes.

8. Krakara:- It prevents certain substances from rising into the nasal cavities or descending into the throat causing sneezing and coughing.

9. Dev Dutta:- It ensures the absorption of extra oxygen into a tired body and causes yawning.

10. Dhananjaya:- It remains in the body even after death and sometimes causes the corpse to swell.

Before doing Pranayama exercises, certain basic instructions must be followed. Pranayama must be done regularly either in the morning or early evening for better results. Pranayama must be done at a calm, clean secluded place free from mosquitos flies and ants. Nose, throat and mouth must be cleaned before doing pranayama. The body and spinal cord should be kept erect, and mouth and eyes closed. A cup of milk or juice should be taken before doing Pranayama exercises. Pranayama exercises should be practised step by step. Pranayama process consists of three different ways i.e., Purka (inhalation of Breath), Kumbaka (Retention of breath), and Rachka (Exhalation of breath). While doing kumbhaka, the facial muscles should not be twisted. Too much talking, sleeping eating should be avoided. For doing Pranayama exercises, three best known asans are siddhasan, sukhasan and Padamasan. While doing Pranayama the mind should be free from anxiety, tension and unholy thoughts. The practitioner of pranayama should not take intoxicants, tobacco, wine, zarda, charas, and drugs and other intoxicants. They can prove very dangerous for health. Age and sex is no impediment in practising pranayama. Persons suffering from any physical or mental ailment or disease should not do pranayama exercises. Women during the period of conception, menstruation and pregnancy should not do pranayama, when the practitioner of pranayama perspires, he should not use towel to wipe off the

perspiration instead he should rub it on the body itself with his hands. Inhalation and exhalation must be slow and rhythmic. Pranayama must be practised in a state of relaxation.

Persons suffering from constipation are required to do the following pranayama exercises.

1. Ujjayi Pranayama

Comments

Ujjayi pranayama creates heat in the body, so it is more beneficial in cold season. It is very beneficial to persons who are sensitive to cough, colds, influenza and bronchitis. It is also highly beneficial to persons from chronic constipation. It also reduces blood pressure. It also improves appetite.

Technique:- Sit in Padmasana or Siddhasana. Close the eyes and the mouth. Inhale through both the nostrils in a slow, smooth and rhythmic manner. Retain the breath as long as you can without any strain or stress and exhale through the left nostril by closing the right nostril with your right thumb. Expand the chest when you inhale. During inhalation a peculiar sound is produced owing to the partial closing of glottis. Repeat it 8 times.

2. Bhastrika Pranayama

Comments

Bhastrika is also a powerful pranayama exercise and should be practised under the supervision of a yoga teacher. In this exercise lungs get maximum exercise. The entire respiratory system is invigorated vitalised and purified. This exercise should not be practised by those who are suffering from some heart or lung ailments. A regular practice of this exercise will be beneficial in the treatment of Asthma and Constipation.

Technique:- First stage: Chandrang Bhastrika. Sit in Siddhasana or Padmasana. Close the mouth and the eyes. Close the right nostril with the right thumb and inhale and exhale through the left nostril known as Ida or Chandra nadi or the moon nerve, with great emphasis the whole process resembles the movement of a bellow of a blacksmith. The head or shoulder should not be moved due to fast inhalation and exhalation. Repeat it 8 to 10 times. At the end, breath for 20 seconds. Then exhale very slowly.

Second stage: Suryang Bhastrika. The same process should be done now through the right nostril. Keeping the left nostril closed with the ring finger and followed by inside retention of breath for 15 seconds.

Final stage: Repeat the same process as above but use both the nostrils. Inhale and exhale rapidly and with emphasis for 20 seconds. The last breath should be inhaled and retained inside for 20 seconds. One can retain the breath as long as one feels comfortable. It should be done about 10 to 15 rounds.

3. Sheetali Pranayama

Comments

The word "Sheetali" implies cooling. By doing this Pranayama exercise cooling effect is experienced throughout the body. Sheetali is a good blood purifier. It controls high blood pressure. It also cures chronic constipation and destroys Gulma (Chronic-dyspepsia).

Technique:- Sit in any comfortable Asana and protrude the tongue out of the mouth and curl it up like a tube. Inhale slowly through the mouth and through the tube of the tongue. Retain breath for a short while exhale through both nostrils. Repeat it 10 to 15 times daily.

4. Sheetakari Pranayama

Comments

Sheetakari has the same benefits as sheetali pranayama. This pranayama exercise enhances the beauty of practitioner and increases the vigour and vitality. It also removes hunger, sleep, indolence and constipation.

Technique:- Sit in Padamasan or Siddhasan and fix your jaws and the teeth over each other. Open the lips but do not open the mouth. Inhale quickly by sucking air into the mouth through teeth in a hissing manner. The teeth and tongue should not move and their position should not be altered at any time. After complete inhalation, exhalation through the nose. Do not retain the breath at any time during this exercise. Repeat this exercise 10 to 15 times.

5. Bharamari Pranayama

Comments

In Sanskrit : "Bharamari" means humming of the bees. In this exercise, humming sound is produced. This pranayama is highly beneficial for nerves. It induces relaxation and gives relief in high blood pressure. It is also beneficial for persons suffering from throat ailments and chronic constipation.

Technique:- Sit in Padamasan or Siddhasan and inhale deeply through the nostrils. Plug the ears with the forefingers, exhale through the nostrils producing a humming sound. Repeat it 10 to 15 times. In this pranayama exhalation should be of longer duration with unbroken humming sound.

6

The Milk Therapy

Since the dawn of human civilisation, the great value and importance of milk for Infants, adults, healthy and diseased persons have been emphasized. From the early days of curative science, milk has been recommended as the main diet to patients. In Germany and Russia many doctors have proposed that many chronic diseases could be cured by milk. Milk and curds have important place in yogic diet and yoga therapy. Both milk and curds are highly beneficial for persons suffering from chronic constipation. There is no adequate substitute to milk. No food offers a greater variety of uses than milk. Pure cow's milk contains 87% water, 4.9% fat, 4.8% sugar, 3.3% protein. All the materials that make new blood and tissues are contained in pure milk. The vital force of our body can absorb more nutrition from milk than from any other article of diet, natural or artificial. The fat which is naturally dissolved in milk as an emulsion, is more digestible than any other form of fat. A child fed on milk alone can grow up without any deficiency. An invalid due to chronic diseases can recoup his health and strength with the use of milk. Many diseases are caused by vitamin deficiency. Milk contains all the vitamins and nutritive salts which would correct this deficiency. Diets which contain little or no milk will be inadequate in calcium and riboflavin. Milk contains two important proteins namely casein and

lactalbumin of these casein accounts for about three fourths of the protein in cow's milk. The essential amino acids present in these proteins are supplied in almost Ideal proportions for maximum tissue structure. Milk supplements in an adequate fashion, for it supplies the amino acids lysine tryptophan which are lacking in the cereals. The Biologic value of proteins in white wheat flour which is 50 percent when used alone is raised to 75 percent when milk is used with it. The fat of milk is highly emulsified and is easily digested. Of special interest is the lactose of milk, for this carbohydrate occurs no where else in Nature. This sugar is peculiarly adapted to making milk the Ideal food for the young because it is much less sweet less than sucrose and other sugars. It gives milk a bland flavor. Milk is an excellent source of tryptophan which is now known to function as a precursor of niacin. In addition to its abundant and readily utilized protein, calcium and riboflavin milk supplies a liberal quota of vitamin A and thiamine. Though milk is an indispensable food, it is not an entirely perfect food. It contains a limited proportion of Iron, copper and asorbic and the enzyme renin coagulates the milk in the stomach and separates, it into two parts, namely the curds and the whey. The curd or the solids are made up of casein, fat the fat soluble vitamins and some of the minerals. The whey is made up of water, lactalbumin and lactoglobin, lactose, some of the minerals and the vitamins of the B complex. All of the proteins of milk are partially digested in the stomach. The finer the curds, the more rapid will be the digestion and absorption. Evaporated, fermented, and boiled milk produce finer and softer curd than raw milk. The digestion of milk is completed in the Intestine where the end products of protein digestion are the amino acids and the lactose is spilt to galactose and glucose. The fat of milk is very finely divided and is acted upon to a small extent, by the lipase in the stomach, although

most of the digestion of fats occurs in the small intestine. The milk is the most completely digested food and is assimilated readily in itself milk is neither laxative nor constipating in its effect. Boiled milk is no more constipating in its effect than fresh raw milk.

There are different varieties of milk. Fresh milk, skim milk, butter milk, evaporated milk, plain or Irradiated, condensed milk. It is also possible to obtain cultured milk or milk which has been fermented by the addition of lactic or citric acid. Fresh milk may be modified by homogenization, irradiation and acidification. Homogenized milk is fresh milk which has been pasteurized and subjected to a process which breaks up the fat into very fine droplets and mix them so completely as to make it impossible for the fat to rise as cream. This milk has a fine taste and gives a softer curd, but it is not different in food value from plain milk.

Vitamin D Milk

Milk is not a good source of vitamin D, but of all foods which may be fortified with the antirachitic vitamins, milk is most suitable. Concentrated fresh milk is produced by removing two thirds of the water at low temperatures, and then pateurizing and homogenizing it. Cultured milks are prepared from pasteurized milk to which certain desirable microorganisms have been added. The most widely known of these cultured milks is butter milk which is a by-product in the manufacture of butter from cream. Cultured butter milk may be made from skim milk, partly skimmed milk, reconstituted dried skim milk. It is heated and cooled to room temperature, cultured with streptococcus lactis and incubated. Salt is sometimes added to bring out the flavors. Yogurt is a pasteurized milk product of custard like consistency which is fermented by using a mixed culture of organisms. It may be prepared from whole milk

or from milk containing additional milk solids. The fermentation of the milk results in a formation of lactic acid from the lactose, Lactic acid in turn is believed to encourage a favorable intestinal flora. The consistency of the milk is less fluid. And the flavor is much desired by many people. These milks are sometimes referred to as soft curd milks. Evaporated milk is the product obtained from fresh whole milk after a little more than half of the water has been removed. During the process, the protein is changed to a certain extent so that softer, finer curds form in the stomach during digestion. It is wholesome easily digested, free from bacteria until the can is opened and lends itself particularly well to the preparation of infant formulas when diluted to its original volume with water. It has a composition like that of whole sweet milk. Evaporated milk may be increased in vitamin D content through irradiation, condensed milk is prepared by adding sugar to milk and reducing its water content by evaporation. It owes its keeping qualities to its high sugar content (42 percent) rather than to the application of heat. Dried milk results from the removal of 95 to 98 percent of the water from fresh milk. No fat dry milk solids are made from skim milk. Dried milks are made by passing milk in thin layers over heated surface in vacuo (roller process). It comes in finely divided form and may be easily reconstituted to its original composition. One pound of skim-milk powder is about equivalent to 5 quarts fresh skim milk. Dried milks are easily soted and transported for they require no refrigeration. Whole milk powder is subject to rancidity, but skim milk powder has much better keeping qualities.

The belief that skim milk is unfit food for humans has resulted in a waste of protein, calcium riboflavin, and other B vitamins. Whole milk, as compared with skim milk, differs only in its higher fat content—Thus being

higher in calories—and in its vitamin A contribution. Milk is a basic food material for the preparation of both liquid and solid foods in the dietary. As a beverage it furnishes one of the best carriers for the reinforcing agents since its mild flavors makes it easy to add egg white or whole egg, cream, chocolate, glucose or lactose and bottled beverages. It is thus possible to vary the liquid diet acceptably. Milk soups made with a white sauce and pureed vegetables as well as chowders furnish important additions to the diet, while custards, milk puddings renet desserts, ice cream, and milk sherbets add to the palatability of the diet. No fat milk solids may be used in a wide variety of cooked and backed dishes, in beverages, in the preparation of buttermilk of nice flavour, and as an effective reinforcing agent when the protein intake must be increased above the normal level. In the latter capacity it may be used in the cookery of cereals in bread, in mashed potatoes, meat loaf, and many other ways, as well as in the preparation of high protein beverages.

Milk can directly enter and enrich our blood through the lacteal vessels. Dr. Porter says that milk differs from blood only in colour. Milk is absorbed in any part of the digestive system—from the mouth to the rectum. So one who has a disease in any part of alimentary canal may be benefitted from other parts. If milk is taken as diet. Milk can be digested even if it is syringed into the bowels. The white corpuscles of milk entering into blood have the power to fight against the disease producing germs remaining in blood. So milk will purify the blood even of destructive germs. The specific gravity of pure milk is 1029-1035. Boiling and adding sugar to milk destroy some of the good qualities of milk. So it is better to consume milk raw in its natural form, but if there is any doubt as regards its purity it must be boiled. It is established that 32 ounces of milk may give nutrition

equal to 8 eggs. Milk is the best diet to restore lost health and milk alone will suffice for many chronic patients both as medicine and diet.

The milk therapy treatment is not an all cure method. It is applicable in chronic cases of constipation. Supervision of several acute diseases by medication is one of the causes of chronic diseases. Modern society diet of highly refined, low fiber foods has led to an epidemic of chronic constipation which can lead to many of the diseases such as colon cancer and diverticulitis. This happens because toxic materials build up in the Intestines when food does not move through them fast enough. That is why it is said "Death begins in the colon". The key to bowel health is to keep food moving through the intestinal tract. Food that moves quickly cannot stagnate and create toxic substance. If our bowel is largely full, the muscles will proper this bulk through at a proper rate of speed. Laxatives and purgatives may relieve constipation but in course of time the person becomes accustomed to laxative and purgative habits. In connection with nourishing diet one may think of artificial concentrated medicinal food preparations and extracts, they may contain all the nourishing elements by scientific analysis but the natural work of digestive system on an artificial thing is different from its action on a natural food like milk, the working of life force is beyond the Investigation of science. Meat extracts, stimulants and artificial food preparations excite the nervous system or the bodily organs in general but despite the great nutritious value of milk it does not give any such excitement to the system, milk contains in it the natural life— force of the body. The stomach needs some bulk or roughage and the bowels large residue for proper digestion and elimination, the extracts have not this quality which the large quantity milk can supply. Milk is the only food which can be forced in excess without any harm. When the body and mind are at

complete rest the energy is completely devoted for the digestion of milk, the more milk is digested the more blood is created and vitality increased. One who cannot digest even a little quantity of food will become able to digest large quantity of milk. Medicines work only with the blood actually present in the body which may or may not be sufficient for the reactions but milk therapy create new blood. The action of tonics and medicines results in a loss on vitality in the long run. The constant use of laxatives and purgatives will weaken the body in course of time and poison the blood, for example the frequent use of purgatives to correct constipation may itself cause more severe constipation due to the weakness of bowels caused by over stimulation. Milk therapy strengthens the tissues of all organs, produce abundant blood and other vital fluids, eliminates all poisons accumulated in the system by disease, medicines wrong food, narcotic habits etc.

Digestive ailments of all sorts namely, dyspepsia constipation, ulcers of the digestive tract, acidity of stomach, liver troubles, dilation of the stomach, prolapses of the stomach and intestines chronic dysentery and colitis, piles are corrected. Dr. Portor suggests that the ailments for which milk therapy is especially recommended are dyspepsia, constipation, consumption and rheumatism. In milk therapy taking milk in exclusive milk-diet should be very careful milk should not be gulped down as water or any other fluid. Touch the tip of the glass to the lips or tongue and suck in the milk like an infant, each drop must be mixed in the mouth with the saliva which will dilute and warm the cold milk to help digestion. The smaller the sips the smaller the curds formed in the stomach and easier the digestion. Stretched relaxed, lying position should be kept up during the milk-drinking hours. This recumbent posture will help to correct the prolapsed organs and to keep the milk in proper places of the digestive organs

without much vibration which may cause diarrhoea and other disturbances. Sitting or slating position is not advisable. During the period of milk-diet it is not necessary to give rest to the stomach, but force the digestive system to work upto its maximum ability. Give no heed to bloating and fullness of the stomach which most patient may experience especially in the afternoon and during the first few days of taking full quantity. Digestion and absorption of milk are noted from the form and colour of stools and the taste in milk. Undigested stools will have the form and colour of curd and whey. It will sink to the bottom of the closet and sometimes there may be hard ball like masses of curd in it. Mere watery stools also is an indication of unabsorption. Generally, feaces of absorbed milk is solid and is passed in the natural way. But in rare cases of some patients stools will not solidify during the milk-diet days and the semisolid or frothy mass passing out will float on the water of the closets is a symptom of indigestion, too much sour taste in mouth also indicates indigestion. It is not the quantity passed through the digestive canal but what is digested alone is of benefit. So the patient should not take more than the powers of digestion. We have seen that with some patients milk has aggravated constipation such patients should know that it is only temporary. The after effect being satisfactory. The chief cause for constipation during milk therapy is the accustomed habit of the patient to take laxative medicines regularly to get motion. Complete stopping of such stimulants during milk therapy causes temporary constipation. The use of orange juice is very good therapy for constipation. Take one or two oranges half an hour before the first dose of milk and one hour after finishing milk in the evening. One dose of the 10-20 ounces of warm milk after midnight may give free motion in the morning in some cases of chronic constipation. This will prove better than all Laxatives and stimulants; doing Asans taking a glass of water will be beneficial. Sometimes want of

sufficient quantity of milk also causes constipation. In that case the quantity should be increased. In the past, Generally it was said and believed that yogasans should be done empty stomach. Now research has shown that stomach should not be empty. Asans should be done after taking a cup of milk or tea. Asans done with empty stomach can create acidity and many ailments associated with digestive system.

7

The Diet Therapy

Good nutrition is very important for our physical and emotional well being. It gives us vigour and stamina we need both to carry on and enjoy our daily activities. Food contains the nutrients such as protein, carbohydrates, fats, vitamins, and minerals that we need for growth, maintenance and repair of body tissues and energy production.

The frequency of bowel movement varies from person to person. Most people have a bowel movement daily but for some people an evacuation every second day is normal. There are two types of constipation which are affected by diet namely,

1. Atonic Constipation in which there is lack of tone,

2. Spastic Constipation characterized by excessive tonicity.

Atonicity obstructive constipation is not a dietary problem. Atonic constipation is the most common type of constipation. In it the intestinal walls lack muscular tone so that peristatic action is impaired. The food mass thus cannot move at a normal rate down the tract. Bacterial action may be greatly increased owing to the stagnation of material in the colon and the products of this action may be responsible for some of the symptoms usually occuring as a result of constipation. The common symptoms of this disturbance include headache. Malaise bad taste in the mouth and foul breath.

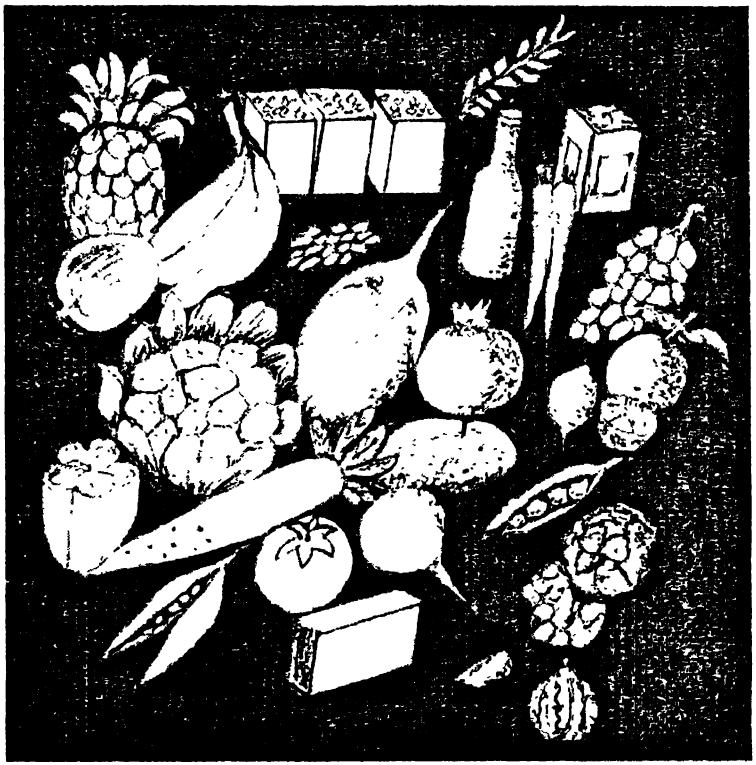


Fig. 7.1 : The Yogic Diet

Spastic constipation may occur as a separate disorders or as a complication of some other disease. Unlike the atonic type, spastic constipation is characterized. By increase tonicity of the musculature. The contractions throughout the tract act in spasmodic manner causing the Irregular movement of the food mass spastic constipation may be caused by irritation of the Intestinal mucosa through the excessive use of alcohol, spices, tea, coffee, or laxatives. Highly strong nervous people are more frequently affected by this type of constipation. The colon becomes spastic and the faecal mass may be impacted at the point of spasticity.

The stool are usually small, dry, ribbonlike and frequently combined with muscus.

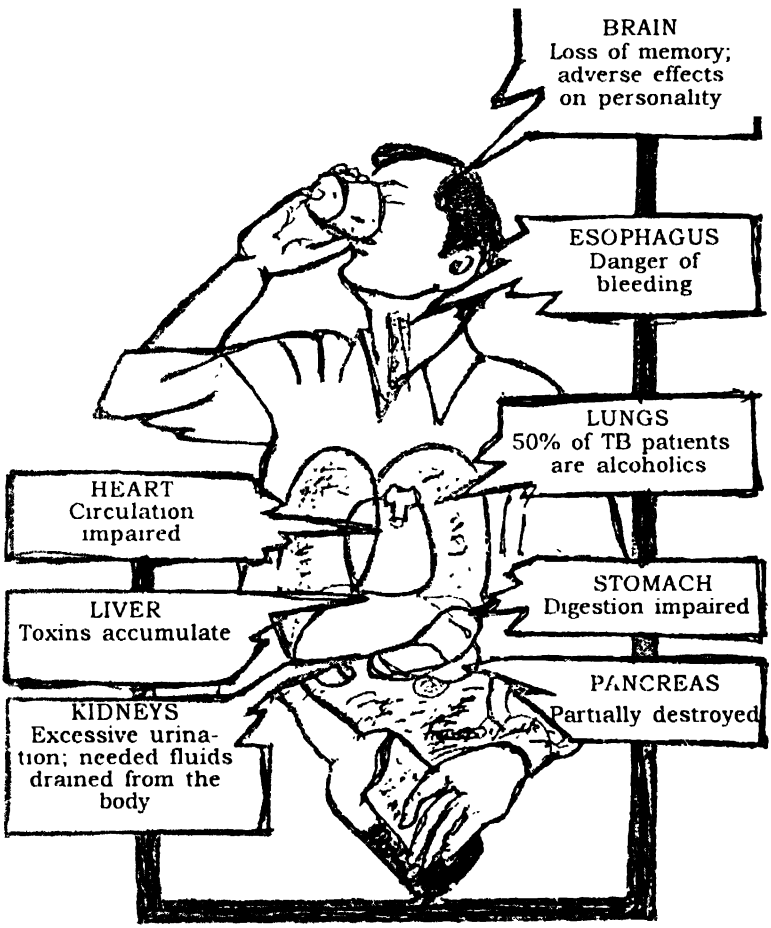


Fig. 7.2: Effects of Alcohol

Vitamins are responsible for good health and vitality, energy growth and longevity. They are found in small

concentrations in foods each of the essential vitamins has a specific function in the body. Individually none of them can work efficiently. They are effective only when they work with one another.

Vitamin B, or thiamine is one of the most important members of the B Group vitamins. Thiamine is destroyed when heat is applied in cooking. The loss is significant when vegetables are cooked in excessive water which is thrown away afterwards. The addition of sodium carbonate (Cooking soda) in some vegetables increases the destruction of this vitamin. Thiamine is absorbed from the small intestines. Thiamine undergoes a change in the Intestinal mucosa. About 25 to 30 mg are stored in this changed form in the body. Thiamine promotes growth, protects the heart muscle, and stimulates brain action. It aids digestion especially of carbohydrates. This vitamin improves peristalsis and helps to prevent constipation. A lack of sufficient thiamine in the diet can cause loss of appetite, poor digestion, and chronic constipation. The rich sources of thiamine are Cereals, rice bran, Barely, Maize, Soya Beans, Peas, Split green gran, Lotus stems, Capsicums, Turnip green, Beet green, Radish leaves, Potatoes, Groundnuts, Mustard seeds, Walnuts, Chilgoza, Almonds, Apricot, Pine apples, Melon. Another vitamin called pantothenic acid (vitamins B5) is part of the enzyme system which plays an important role in the metabolism carbohydrates fats and proteins. This vitamin is involved in all the vital functions of the body. It stimulates the adrenal glands and increases production of cortisone and other adrenal hormones. It is primarily used as an anti-stress factor and protects against most physical and mental stresses. A deficiency of pantothenic acid can cause chronic constipation, fatigue, greying and loss of hair, mental depression and dizziness. The rich sources of pantothenic acid are wheat germ, Brown rice, Wheat

flour, Soya bean, Split peas, Lentil, Mushrooms, Broccoli, Cauliflower, Peanuts, Sunflower seeds, Cashew nuts.

Yogic diet is panacea for most of the diseases. Diet is of great importance in yoga therapy which says that a person should eat to live and not live to eat. Yogic diet is balanced diet. It is sattvic diet. Green vegetables fruits and curds are part and parcel of yogic diet. Person suffering from chronic constipation should eat more of Cucumber, Tomatoes, Carrots, Spinach and Cabbage. The object of the dietary treatment is to encourage regular elimination by stimulating peristalsis and improving the tone of the muscular walls of the tract especially of the colon. Fiber absorbs water increases the bulk of the faecal mass, and in turn stimulates peristalsis by means of additional pressure. The normal mixed diet contains an average of 5 to 6 gm. of fiber, whereas the diet used in the treatment of constipation should contain 10 gm of or more daily. Additional fiber and thiamine are provided by whole-grain cereals, fruits and green vegetables raw foods being especially valuable in the treatment of constipation is a normal adequate diet with particular stress on the fiber content and vitamin B complex levels. Individual suffering from atonic constipation are required to reduce their weight Diet is of great importance in the development and promotion of health and prevention of disease. According to yogic diet it is not what we eat but how and when we eat that matters. Liquids are drunk, solids pulverised by the teeth, semisolids are taken by licking and soft articles swallowed without mastication. All articles of food must be chewed thoroughly before they are swallowed. Then they can be easily digested and absorbed in the system. Saliva a digestive juice can transform starch into maltose or body sugar. Those who eat too fast normally eat too much and excess of every food is harmful. Proper digestion or assimilation of food keeps proper evacuation

and causes no constipation. Some parents are in the habit of pressing their children to eat quickly, some parents use even threats and others give the temptation of awards of prizes to the children for eating quickly and prize is promised to a child who finishes the first. Our ill-health is also due to the faulty methods of handling, preparing and cooking foods. It is said "Heaven sends us good foods but devil sends us bad cooks". Pealing, Soaking, Roasting, Frying and overcooking destroy the vitamin content and enzymes of foods. By throwing away the liquid in which vegetables have been boiled or cooked, we throw away the vitamins and enzymes. It is said hunger is the best sauce we must eat when we are hungry even simplest dishes become delicious when taken under the spell of hunger Food taken under compulsion threat, worry, emotional stress produces Indigestion and gas trouble. In our day to day life we come across persons who express anger, resentment and wrath over trifles and go upto the extent of throwing away the Thali containing food. Though by showing violent or Indecent behaviour the effect of the anger may subside in a short time but the vibration will continue for many days. Worry is to man what canker is to rose. Recently lot of research has been done on vitamins. In recent years much has been said on the function of trace elements and dietary fibre in human health and disease. As a result of it new concepts like nutritional rehabilation have been evolved. Despite these advances, malnutrition and undernutrition are still prevalent in developing countries. The dietary constituents of food can be classified into proteins, Fats, Carbohydrates, Vitamins, Minerals and Water. The degree of these constituents varies from one food to another. The human body is made up of these constituents and has the following approximate composition:-

Composition of Human Body

Matter	*Percent*
Water	63
Protein	17
Fat	12
Minerals	7
Carbohydrates	1

It would not be out of place to mention the protein quality and needs of the body.

a. Digestibility Coefficient (DC):- It is the percentage of Injested protein absorbed into the blood stream after the process of digestion is over.

b. Biological Value (BV):- It is the percentage of nitrogen retained from out of the nitrogen absorbed from the diet.

c. Protein Efficiency Ratio (PER):- It is the gain in weight per unit weight of protein consumed.

d. Net Protein Utilization (NPU):- It is a product of digestibility coefficient and Biological value. Digestion coefficient Biological value of some common food are give below:-

Protein Content

Name of food	*PC*	*DC%*	*BV%*	*NPU%*
Egg	13.3	98	98	96
Milk	3.5	95	85	81
Maize	11.1	85	50	43
Rice, Millet	7.0	93	70	65
Wheat	11.8	85	60	51
Bengal Gram Dhal	22.5	84	62	52
Black gram Dhal	24.0	82	54	45

Green gram Dhal	24.0	85	58	49
Red Gram Dhal	22.3	83	56	46
Ground Nuts	26.7	92	54	50
Coconut	4.5	82	67	56
Soyabean	40.0	86	64	55

Yogic diet is a normal one with supplements of fruits, vegetables, whole grain cereals and curds. Yogic diet is one which contains different types of simple and natural foods in such quantities that the need for energy aminoacids, vitamins, minerals, fats, carbohydrates is met for maintaining physical and mental health. Diet directly or indirectly influences the mind. Mind should be free from anxieties and conflicts and unholy thoughts. The popular story of two monks illustrates this point. Once two monks were walking from one village to another and they came across a young girl sitting on the bank of a river, crying. One of the monks, went upto her and said, "sister, what are you crying about"? The girl replied "You see that house across the river. I came over this early morning and had no trouble wading across, but now the river has swollen and I can't get back. There is no boat". The monk said, "Don't worry that is no problem". The monk picked her up and carried her across the river and left her on the other side. And the two monks went together. After couple of hours when they started taking their meals, the other monk said, "Brother, we have taken a vow never to touch a woman. What you have done is a terrible sin. Don't you have a great sensation in touching a woman"? The other monk replied, "I left her behind two hours ago you are still carrying her". Even while taking food our minds are crowded with anxieties, tensions and unholy thoughts. In yoga there are three kinds of diet, i.e., Sattvic diet, Rajasic diet and Tamasic diet. Lord Krishna says to Arjuna, "The foods which increase vitality energy, vigour and health and which are delicious bland are Sattvic,

the foods which excite passion and which are bitter, sour, excessively hot are Rajasic and food which are stale, tasteless rotten and puttrid are Tamasic". Yogic diet aims at harmonious development physical mental and spiritual. It is nutritious but not rich. A rich diet may prodice diseases of the liver. Kidneys and pancreas. A yogic diet increases efficiency stamina and vigour. Yogic diet includes among other things Fruits, Milk, Cheese, Curds, Wheat, Ghee, Salad, Soyabean, Green and Yellow vegetables. In yogic diet fresh green vegetables, fruits, salad are consumed generously. Fruits and vegetables are the main source of vitamin C.

Dietary Sources of Vitamin C (mg per 100 g.)

Amla	600
Guava	212
Lime	63
Orange	30
Tomato	27
Bengal Gram	15
Green Gram	16
Cabbage	124
Spinach	28
Cauliflower	56
Radish	15
Onion	11

The old adage still says, "Eat breakfast like a king, lunch like a queen and supper like a beggar". Just as over-eating makes the body fat so under eating makes it weak and nervous. The proper balance must be maintained between the needs of the body and the quantity of food absorbed.

Water is a great elixir of life. Most of the diseases and physical ailments prevalent in developing countries are

due to unsafe water and impure water. Drinking water should be safe and wholesome free from pathogenic agents, free from harmful chemicals and pleasant to the taste. The term polluted water is very akin to contaminated water. Water should be neither too hot not too cold. We should avoid drinking water while eating because such liquids dissolve the gastric juices and swell the stomach. Water drunk half an hour before or after meals is useful for health. A glass of water at bed time and on getting up in the morning will wash the organism.

Why our fore fathers were more stout and healthy than we are? They ate food, wholesome foods like milk, curds, cheese, ghee fresh vegetables and fruits. They could not think of "fast foods, stuff selling foods, junk foods, wrapped sandwiches, hot dogs, hamburgers, ice candies, nor would they dream of polished rice, frozen meat, food addictives and poisonous pesticides. They would avoid taking articles that are putrid stale chilled and decomposed. During their life time there were no schools of nutritions, dieticians and beauticians. The diet theories like "Menu theory", "The caloric theory" were unknown to them.

The yogic diet is fresh, simple and sattvic diet. It is non alcoholic natural, non-stimulation health, building and energy producing food. The famous saying of Hippocrates "Thy food shall be thy remedy", is true for all ages and all men. Persons suffering from constipation should avoid highly refined and concentrated foods. They should also avoid excessive amounts of very coarse cereals. They should take fluids 8 to 10 glasses daily. Emphasis must be placed on good health habits that is a regular time for elimination, adequate rest and relaxation, Yogasans and Pranayama and regular time for meals.

PART-XII

STRESS

1

The Nervous System

All the systems in body have specific functions and specific aim. All the systems are important and significant in their own place. A defect in one system can influence and affect other systems also. All our life we have been living in a continuous storm of stimuli, the small and big physical and chemical forces from the outside world. We have been acting and reacting every minute by impulses of light and sound. We feel shivered in a cold wind, recoil from pain, and feel the sensation of pressure. We come across smells and taste both pleasant and unpleasant and we also jerk our hand away from a dish that was too hot. If we stepped on a sharp object with out right foot, we quickly flexed the muscles of our right leg and extended our left leg to maintain balance. We reacted without stopping to think even a moment about what we should do about the situation. The various parts of our nervous system received and analysed the message from our foot and decided instantly what should be done. Sometimes we have participated directly in decisions of the nervous system as while eating breakfast we decided whether orange juice was sweet or the milk sour. And when we left the table a feeling in our stomach helped us decide whether we were still hungry. As we started to leave our home,

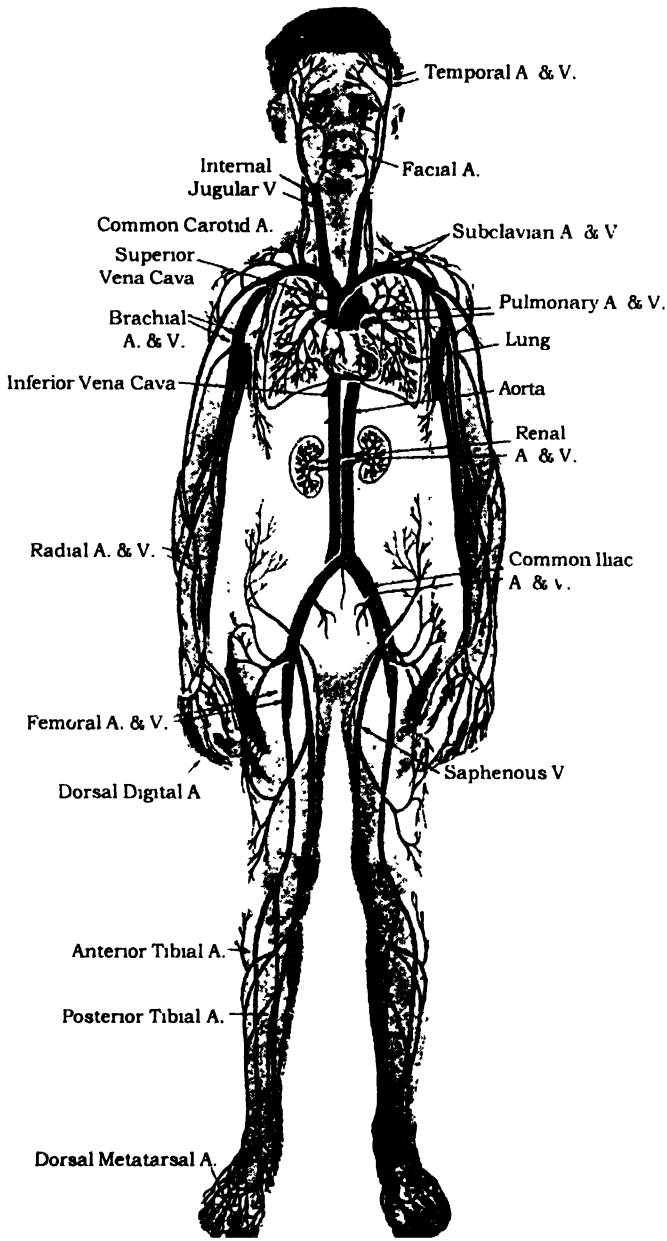
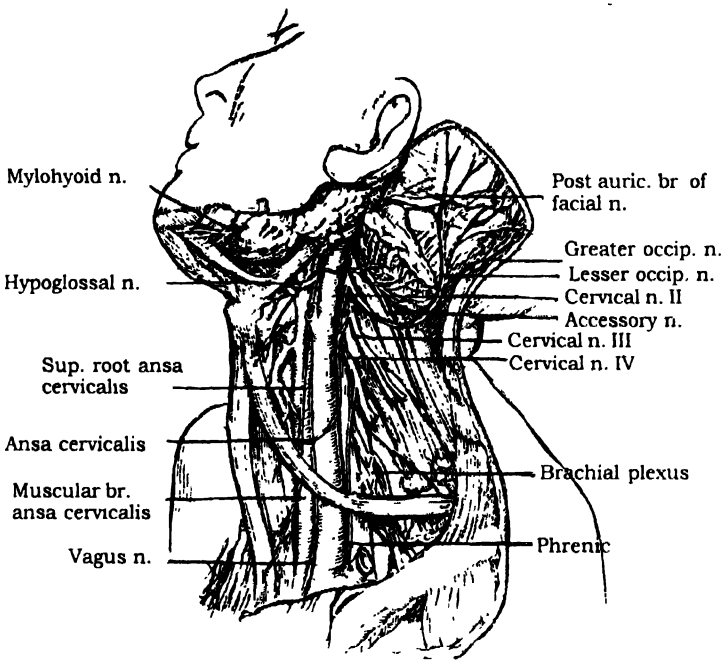


Fig. 1.1: Arteries and Veins of the Body

we remembered where I could find my helment. When we stepped outside the muscles in the Iris of each eye automatically adjusted almost every second to impulses picked up by the millions of nerve receptors scattered over our body. Sometimes we made the decisions and sometimes our body decided for itself but in each case, messages were flashed back and forth through the nerve network that controls every action we take, our body has millions of pain, pressure and hearing receptors and each eye contains over 100,000,000 light receptors. Add to these the taste, smell along the nerve paths to the brain which alone contains over 12000,000,000 nerve cells, and it is not difficult to think of the nervous system in terms of computers, However the human nervous system is in some ways more efficient than an electronic computer.

To understand better how a nerve works, let us take a close look at a single nerve cell. Under a microscope a nerve cell or neuron may appear in a tiny Irregular or rounded blob with one or more threads extending from it. The threads are the nerve fibers and the blob is the cell body that serves as a "local" headquarters for the nerve unit. There is one fiber longer than the others, called the axon it always carries nerve impulses away from the cell body. The shorter fibers are called dendrites. They carry nerve impulses towards the cell body. The fibers may be a fraction of an inch in length or as much as three feet long in the case of some that extended to the feet. When a nerve fiber is cut or crushed, the part of the fiber still connected to the cell body continues to transmit impulses but the part on the other side of the injury gradually degenerates and finally disappears. However if the nerve is protected by a sheath and the parts of the damaged fiber are not too far apart, the damaged nerve may be replaced. Surgeons sometimes sew the divided nerve parts together. This does not



BRACHIAL PLEXUS

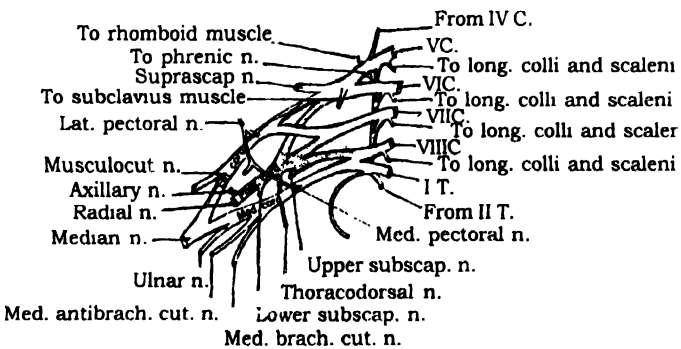


Fig. 1.2: Nerves of Neck and Axilla

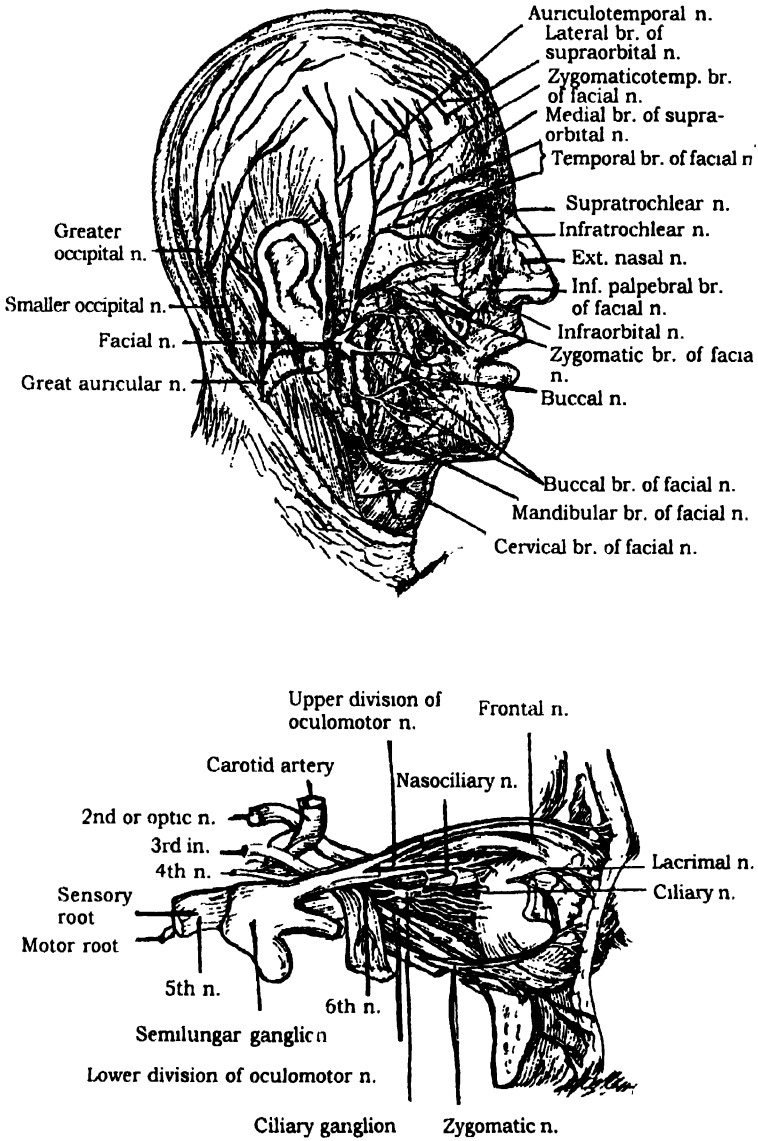


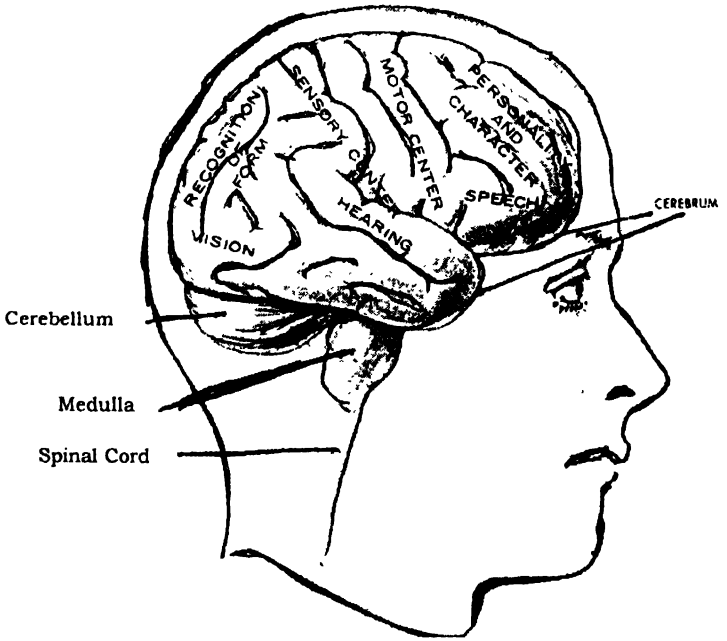
Fig. 1.3: Nerves of Head and Orbit

restore the usefulness of the fiber that is separated from its cell body, but it does provide a path for the new fiber to follow unfortunately damaged fibers of the optic and auditory nerves as well as those within the central nervous system cannot be repaired by this method. In moving through this methods. In moving through the net work of nerve fibres the impulse travels by a sort of chain reaction. One nerve cell triggers the next cell along the route. At the end of the fiber, the impulse jumps to the next by crossing a junction, called a synapse. Certain chemicals secreted around the synapses help or retad the jump of the nerve impulse. One chemical acts as a conductor to speed the impulse on its way and the other acts as an insulator to slow up the impulse. The nerve impulse is a combination of electrical chemical action. Chemical changes are produced along nerve cells when an impulse is transmitted.

Central Nervous System

The central nervous system includes the brain and the spinal cord. Connected to the central nervous system is the peripheral nervous system which includes the 12 cranial nervous running to sense organs, the heart and other internal organs. The peripheral system also includes the 31 pairs of spinal nerves both sensory and motor, that reach to skeletal muscles throughout the body. (Fig-1).

Each of the spinal nerve joins the spinal cord by splitting into two roots, one root carries sensory type fibers to the cord. A small bulge on the rear root called a ganglion, contains nerve cell bodies. The other root of the spinal nerve, the front root, enters the cord at the horn of the grey matter directly below the horn entered by the rear root. The front root carries motor type nerve fibers, the cell bodies of the front foot are inside the grey matter of the spinal cord. In several parts of the body,



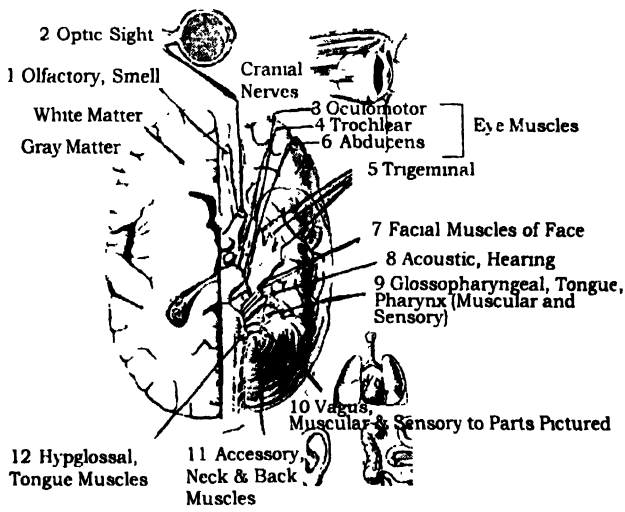


Fig. 1.4: Cranial Nerves

nerve fibers branch about and connect with. Other nerve bundles. Such a group of branching and inter connecting nerves is called a plexus. One of the best known of these is the solar plexus located in the back of the stomach.

Autonomic Nervous System

There is another network known as autonomic nervous system that controls the smooth muscles of the Internal organs. The autonomic nervous system is separated into two sets, the sympathetic and the para sympathetic one set of nerves causes activity among the smooth muscles of the body, the other reverses the action. The sympathetic nerves dilate the pupil of the eye. The para sympathetic nerves constrict the blood vessels and speed up the heart beat, the parasympathetic nerves dilate the blood vessels and slow the heart beat. These are autonomic actions involving the Involuntary muscles.

The Cranial Nerves

The cranial nerves are attached to the central nervous system through the base of the brain. Most of the dozen pairs of nerves in the system are both sensory and motor. The cell bodies of the cranial nerves motor fibres are within the brain and as with the spinal nerves, the sensory nerve cell bodies are located in ganglia outside the brain. The cranial nerves include the olfactory which runs to receptors in the nasal cavity and provides us with our sense of smell and the optic which runs to the retina of the eye. Three other cranial nerves control the muscles that move the eyeballs. Still another, the acoustic, carries impulses from the sound receptors in the ear. Cranial nerves also include fibers running to taste buds in the tongue, muscles of the face, jaw and neck, as well as the vagus which reaches the heart, lungs,

larynx, stomach, intestines, liver, pancreas, spleen, and kidneys. The brain itself develops in the embryo as a ball at the end of a hollow tube that later becomes the spinal cord. As the ball expands it divides into the cerebrum and the other major parts of the brain, the cerebellum, medulla and the pous. The cerebrum, which eventually dominates the cranial cavity, grows much faster than the other parts of the brain. It folds back upon itself a number of times, producing the convolutions that give the human brain the appearance of a huge gray walnut. The convolutions almost conceal the medulla and the cerebellum, but enable the brain to carry an immense amount of surface area in a small space. The gray matter that gives the cerebrum its colour is only a bark like covering, about an eight of an inch thick called the cortex it contains nerve cells with axons that extend a layer or white matter beneath. The furrows and folds of the convolutions may seem haphazard, but they divide each half of the brain into distinct regions. One deep furrow starting near the middle of each hemisphere and running downward and forward is called the central sulcus. This is an important dividing line between sensory and motor nerve areas. The region behind the line contains nerves that bring stimuli from the hands, feet, face, tongue and various other outer and inner parts of the body. In front of the central sulcus are nerves related to movement of the muscles in the hands, feet, face tongue and other areas. In human machines have detected areas of the brain that react to lights, odours and other stimuli. Knowledge of the sensory and motor areas of the brain helps locate the source of certain diseases involving the nervous system. For example doctors for generations have known that nerve fibers from the right side of the body cross over in the brain stem to the left side of the brain. Similarly nerve fibers from the left side of the body cross over to the right side of the brain. Thus when a person becomes paralyzed on

the right side, doctors can assume safely there has been damage to the motor area on the left side of the brain. Damage to the association areas of the cortex may be revealed when a person can see simple printed words but cannot recognize them or if the motor association area is damaged, the person suddenly is unable to perform such a simple task as writing his name. One region of the cerebrum that has defied mapping is the so called silent area of the frontal lobes. This portion of the brain, behind the forehead, seems to be related to emotions and moral traits rather than simple sensory functions. When fibers connecting the frontal lobes with the rest of the cerebrum are cut or even become unable to understand a joke. The brain not only shows evidence known as brain waves. The brain waves may appear at a frequency of about 10 per second, but they vary in frequency and size. Each person is said to have a brain wave pattern that is as distinctive as his hand writing. Because of their common origin the brain and the spinal cord have the same set of protective membrances, although these vary slightly in different areas. The innermost of the brain like a tight delicate glove it carries many fine blood vessels that nourish the brain. Covering the pia matter is the middle membrane called the aracnoid. If resembles a firmly spider web. The outer layer, the dura matter. Protects the central nervous system from being damaged by contact with bony surface of the skull and spine, and serves as a support for these. The dura matter also forms partitions between the major divisions of the brain, giving them support.

The Cerebellum

At the base of the cerebrum, where it joins the spinal cord, are three structures known as the pons, the medulla, and the cerebellum. The pons looks like a bridge made of coarse fibers. The fibers connect the

medulla with the higher centres of the brain. The medulla just below the pons, is an important switching centre for nerve impulses going to and from the higher brain centres. It is also head quarters for many vital body functions. Body temperature, heart rate, breathing, swallowing, and the size of the openings in blood vessels are controlled by the medulla through the autonomic nervous system of the medulla.

The cerebellum, second largest of the brain division, is divided into ribbed hemispheres. And like the cerebrum, much of the areas of cerebellum have been mapped. The front and back areas control muscle tone. An area behind the back lobe is connected with equilibrium. And the two main hemisphere areas control co-operation of voluntary movement. Thus the cerebellum is important for such activities as walking, dancing playing, or even for such routine task as tying a shoe lace or lifting a glass of water to lips. If the cerebellum is damaged many activities requiring co-ordination could be lost. Even talking distinctly would be difficult because the cerebellum helps co-ordinate the muscles of the vocal cords.

2

Stress and Its Causes

Stress is any External or Internal influence that has, or potentially has an adverse effect on the correct functioning of the body. These influences include physical factors, such as diseases or injury or mental factors particularly anxiety. Some degree of stress is necessary to keep people alert. Problems develop when a person can no longer handle the emotional physical and mental stresses encountered in every day life. Stress changes the hormonal balance in the body and lowers the effectiveness of the Immune system, leading to a higher risk of infection. Dr. A.A. Hingrona equates stress with distress, "Stress is a short form of distress, it is a painful or adverse force producing strain upon emotional and physical endurance". Stress may be broadly defined as "a manifestation of interactions of the stimulus (afferent) reacting on the integrating process which results in the response (efferent)". Yoga suggests that stress is an imbalance between body and mind. If leads to stress. Dr. Salye has defined stress as the non-specific response of the body to any demand made on it. "Stress is a state manifested by a specific syndrome, which consists of all the non-specifically induced changes within a biological system". Some amount of stress is needed for the sake of alertness efficiency duty bound, time bound, promptness,

regularity, punctuality and competitive spirit. But the problems arise when a person is not able to cope with the element of stress in his day to day life. Stress is the spice of life. Like electricity stress is a good servant but a bad master. Dr. Nuremberg says that stress response existed in three stages.

1. Alarm stage, arousal of nervous system.
2. Adaptation stage, body's compensatory response to the first stage of fight or flight.
3. Fatigue stage, dangerous depletion of bodily resources, resulting in breakdown.

A stressful life event or situation— Internal or External acute or chronic generate challenges to which the organism cannot adequately respond.

Emotional stress is often associated with the prolonged contraction of head and neck muscles which over several hours may constrict the blood vessels and result in Ischemia. A dull, aching pain, sometimes feelings suboccipitally and may spread over the head. Headaches frequently associated with stress and tension may occur to some degree in 90 percent of people during periods of emotional stress.

It would not be out of place to distinguish between stress and adjustment disorders. Stressors may be single such as a divorce, or the loss of a job, or multiple such as the death of a person important to a patient which coincides with patients own illness. Stress may be recurrent such as seasonal business difficulties or continuous such as chronic illness or poverty. A discordant intra familiar relationship may produce and adjustment disorder that affects the entire family system sometimes adjustment disorder occur in a group or community setting or in racial social or religious persecution. Specific development stages ... such as

beginning school, leaving home, getting married becoming a parent and retiring. These are often associated with adjustment disorder with depressed mood, the predominant manifestations are depressed mood, tearfulness and hopelessness. Symptoms of anxiety, such as palpitations, jitteriness and agitation are present in adjustment disorders with anxiety. In adjustment disorder with disturbance of conduct the predominant manifestation involves conduct in which the rights of others are violated or age-appropriate social norms and rules are disregarded. Examples of behaviour in this category are truancy, vandalism, reckless driving and fighting. This type of conduct is different from conduct disorder and anti-social personality disorder accompanied by autonomic symptoms. When considered simply as an alerting signal. Anxiety seems basically the same emotion as fear. As a warning of an external or internal threat anxieties have life saving qualities. At a lower level, anxiety warns of threats of bodily damage, pain, helplessness, possible punishment, or the frustration of social or bodily needs. Anxiety prompts a person to take the necessary steps to prevent the threat or to lession its consequences. Examples of a person's warding off threats in daily life include getting down to the hard work of preparing for an examination, or running to catch the last train.

Whether an event is perceived as stressful depends on the nature of the event and on the person's resources, Psychological defenses and coping mechanisms. All involve the ego, a collective abstraction for the process by which a person perceives, thinks, and acts on External events or internal drives. A person whose age is functioning properly is in adaptive balance with both internal and external worlds. If the ego is not functioning properly and the resulting. Imbalance continues long, the person experiences chronic anxiety.

Whether the imbalance is external or internal, the imbalance produces a conflict. Externally caused conflicts are intrasyschic interpersonal and intrapsychic conflicts are usually intertwined. Because human beings are social, their main conflicts are with other people. The peripheral manifestations of anxiety are diarrhea, Dizziness, light-headedness, Restlessness, Syncope, Tachycardia, Tingling in the extremities frequency hesitancy, urgency.

Intense fear of discomfort takes the shape of panic attack. A panic attack is accompanied by at least four somatic or cognitive symptoms, such as palpitations, trembling shortness of breath, sweating and feelings of chowing panic disorder is often accompanied by Agoraphobia, an irrational fear of open spaces which is normally any where other than the person's home. Extreme cases may mean a person is virtually a prisoner in his or her own home. In Agoraphobia there is marked and consistently fear in crowds, public places, travelling alone. The autonomic arousal symptoms are palpitations or pounding of heart, sweating, trembling, shaking, feeling, chest pain, discomfort, nausea, abdominal distress, dizziness, fear of going crazy, fear of dying and numbness or tingling sensations. Agoraphobia is more common in women and tends to develop from the late teens on wards.

Child birth is a hazardous time for both mother and child. Although most premature infants develop normally, a premature birth increases the risk of dysfunction. About 40 percent of premature infants suffer from one or more of mental retardation, behaviour problems, emotional disorders, blindness and movement disorders. Women experience stress and depression in the post partum period. Many experience postpartum blues, a normal state of sadness, dysphoria, frequent tearfulness and clinging dependence. These feelings

which may last several days have been ascribed to rapid changes in women's hormonal levels, the stress of child birth, and the awareness of the increased responsibility that motherhood brings. A similar syndrome is experienced by fathers who have mood changes during their wive's pregnancies or after the babies are born. Such a father is affected by several factors, added responsibility, diminished sexual outlet, decreased attention from his wife. In rare cases a woman's postpartum stress is characterised by depressed feelings and suicidal tendencies. In severe cases the streps and thoughts of infanticide. The feutus is vulnerable and reacts to stimuli such as drugs and maternal stress. Maternal stress during pregnancy affects behaviour in offspring. Maternal hormones cross the placenta and produce secondary effects in the feutus. If a mother is stressed, corticosteroids and other stress related hormones may effect the cardiovascular system of the feutus whose blood pressure is sensitive to external stimuli. Women with high anxiety levels and chronic emotional stress are likely to produce babies who are hyperactive and irritable.

Reaction to severe stress and adjustment disorders are grouped into one category, which is classed together with neurotic and somatoform disorders. Stress can not only be defined on the basis of symptoms but also on the basis of one of two causative influences, a stressful life event causing an acute stress reaction or a significant life change producing an adjustment disorder. Unlike severe disorders, these disorders are always linked to the cute stress or continuing trauma. Stress related disorders in all age groups, including children fall into this category.

In addition to general stresses such as a divorce or the death of a nearest and dearest one, some investigators have suggested that specific personalities

and conflicts are associated with specific psychosomatic diseases. Nonspecific generalised anxiety from any conflict may lead to many distresses. Specific psychic stress may be defined as a specific personality or an unconscious conflicts that causes a homeostatic disequilibrium contributing tc the development of psychosomatic disorder. Specific unconscious conflicts are associated with specific. Psychosomatic disorders (for example-unconscious dependence conflict predisposes people to peptic ulcer).

Hospitalization is attended by feelings of the helplessness and fear. The majority of the people with severe mood disorders. If treated well in time do not need hospitalization. But those who need hospitalization are encountered with stress along with family members during the period of hospitalisation. The symptoms of stress and depression---social withdrawl poor, concentration, lack of Initiative, slowed down movement in thought and speech loss of appetite, and sleep cycles make it difficult for the person to cope with. The stressed person lack of concentration and hopeless feelings about the future frustrate the family members and the stressed person may feel Irritable and angry.

We Experience stress minor or chronic, physical or emotional from the cradle to the grave. Different person react differently to the element of stress. Some persons externalise their stress by becoming visibly upset or by their deplorable behaviour. They may eventually suffer from disorders such as Hyperacidity ulcers, Hypertension, Heart attacks and Strokes. Some internalise their stress outwardly they may appear calm and poised but inwardly they feel tense, nervous and shaky. Their immune systems may malfunction and create serious diseases like Arthritis and Cancer. There are others who cope with stress with a balanced mind and normal behaviour.

Aging is a natural process and each period of human life is divided and distinguished by physical evolution, equilibrium and involution. Our Reflexes, Instincts, Emotions, Sentiments and complexs do change with the advancement in age.

Fatigue is a physical and mental tiredness that may be a symptom of illness or result from too much activity and too little sleep. It is a common complaint that can range from tiredness to exhaustion. It can result from a thyroid gland disorder, inadequate diet, Anaemia, pregnancy, stress, depression, anxiety or a heart condition. The element of chronic stress can disturb the functioning of thyroid gland, create speedy wear and tear in tissues and nerves and accelerate the aging process. The fatigue may be physiological or psychological. The mechanical type of work brings about muscular fatigue and when loses interest in work and feels annoyed one is said to be mentally fatigued. The chronic emotional physical or mental stress creates loss of interest, loss of motive and loss of desire along with changes in the brain functions due to persistent mental work. The element of stress and depression create the feelings of exhaustion of energy and increase toxic waste products in the body and reduce the supply of oxygen. Normally the muscles will not break down too badly in the course of activity. When under the spell of stress, activity becomes so pronounced that wastes accumulate faster than they can be carried out of the organism a condition is developed known as fatigue. Our body is all the time undergoing metabolism i.e., inner changes which is of two sorts, Anabolism and Katabolism. In anabolic metabolism within the tissues of the body there is a process of composition, building up or rejuvenation, when tissues absorb food element and oxygen, brought to them by fresh blood supply. In katabolic metabolism there is within the tissue of the body. a process of

decomposition tearing down wearing down or consumption when energy is being used up in same form of nervous or muscular activity. Stress and strains, create large and numerous poisonous waste products and they cannot be counteracted by oxygen and are carried away by fresh blood causing fatigue. Elements of stress and strain, Tension and depression sometimes completely poison and paralyse the whole system when due to prolonged vigorous activity it is completely exhausted.

Different causes can be ascribed to stress. Man is a bundle of emotions, sentiments, feelings and instincts. Emotions play vital role in our life. Mc Dougall, the famous Psychologist says "An instinct is an inherited or innate psycho-physical disposition which determines its possessor to perceive, to pay attention to, to experience an emotional excitement of a particular quality and to act in regard to it in a particular manner". This famous statement gives us the nature of emotions as well. There are three distinguishable elements in the innate mental structure of instinct.

1. The cognitive
2. The central of emotional aspect and
3. The behavioural aspect.

The central part, emotional aspect persists throughout life as essential unchanging nucleus of the disposition. The negative emotions like Anxiety, fear, anger, ego, react often violently in the body and mind and create tension, stress and depression.

Today lust for money has hardened our hearts, silenced our scruples and corrupted our moral sense. Our culture is honeycombed with dishonest pretences and disco influences. There exists a great gulf between what we say and what we do. We have attached ourselves

to men and money. When we are duped by our hopes and expectations we experience stress. When we get a thing by unrighteous means we are under stress when we do not get we are under stress. Because of the incessant beating of the heart, bodily existence goes on effectively. But man gives no thought what so ever to the beating of the heart. Several other essential activities have to be carried on in similar ways, free from attachment. Absence of attachment leads to the pacification of the mind. Work and rest go on side by side. Mind made calm this way becomes capable of grasping the self. Calmness of mind is not for him who neglects duty.

"There constantly perform you
obligatory duty without attachment,
for, by doing duty without attachment
man verily obtains his supreme."

----- The Gita (3-19).

Genetic Influence on personality cannot be ruled out. It is established that certain bodily disorders such as hemophilia, Huntington chorea are transmitted through defective genes in the families. In the same way certain mental disorders such as schizophenia. It was also established by K.N. Udupa, a medical scientist, that in his studies he found that this enzyme was low in many patients with psychosomatic stress disorders.

Various environmental factors contribute to the development of stress and tension. Stress coming from daily worries and hassles affects adversely the satisfaction level of marital relationship. Among the many causes of marital stress is sex with different partners. The subjects which adopted reproachful attitude, sarcastic remarks, reproaches, negative behaviour (gestures, mimes) and hostile communication

produce stress tension and sometimes depression. Among environmental factors the personal factors, loss of employment, death of nearest and dearest one, birth of a handicapped child, failure in examination maladjustment in new environment may lead to the development of stress. Moreover, among various environmental factors, disturbances in nutrition such as under nutrition, overnutrition and malnutrition precipitate the development of stress.

Excessive intake of fat and carbohydrates will make a person more susceptible to cardiovascular diseases. In such persons cardiovascular stress are seen more commonly.

Sometimes climatic changes also predispose certain stress disorders. Such as Raynand's disease. It is a disease in which the arteries in the fingers and toes go into spasm when the hands and feet are cold. The fingers turn white when blood flow through arteries is reduced, the skin goes blue. Finally the red colour returns as the temperature raises and the blood flow returns to normal. This disease is common in young adults.

People with snuffing and smoking habits are more prone to stress. Tobacco smokers some times become hyper-sensitive to various stressors. Nicotine which is inhaled from Tobacco stimulates the production of neurohumors. But susceptibility becomes disproportionate to the absorption of nicotine, alcohol, drugs and smoking can produce stressful reactions.

Noise pollution and over crowding can cause stress and tension. People living in over-crowed in big cities can become victim of stress disorders much faster than people living in rural areas. Strain and pressure of over work on body and mind can cause stress. Those people who are over-ambitious and undergo ceaseless efforts and toilsome labour can become victim of stress.

Similarly, if a person does over work showing utter disregard of his physical and mental capacity, can get stress disorders.

3

Stress and Emotions

None is poor, O Bhikha
Everyone has rubies in his bundle
But how to open the knot
He does not know
And therefore he is a pauper
— Bhikha Sahib

Health of an Individual depends much on the action and Interaction of two ecological factors.... The Internal Environment or man himself and the external elements. Among the personal or Internal flaws of man are Anger, Fear, Pride, Hatred, Anxiety, Jealousy, Desires, Prejudices, Sensuality, intolerance. All these are the Expressions and symptoms of Negative emotions and negative feelings. The practitioner of yoga should remove these flaws completely. They can be very harmful to his physical and mental health. Some people get irritated over petty or trivial things, Anger, self-conceit and irritability cloud the mental vision and create mental tension. Daily we come across people of egoistical and self-assertive nature. They think themselves to be the wisest people on earth. They will not tolerate the criticism of others. Some people lack adjustability. Their minds are polluted with prejudices, hatred and jealousy. The

practitioner of yoga cannot show any progress unless he removes these negative emotions and flaws. According to Patanjali some foremost obstacles in yoga are disease languor, sensuality, and false knowledge. He advocates the friendship between equals, mercy towards juniors, complacency towards superiors and indifference towards wicked people.

Anger

Anger is a close companion of lust. If we control anger, lust will diminish. Moha is constant companion of greed. If we can destroy Moha, greed will diminish by itself. According to yoga, Kama, Krodha, Lobh and Moh and Ahankar are the main evils of man. They can be controlled by vivek which is more powerful. Anger begets eight kinds of vices. Injustice, Rashness, Persecution, Jealousy, Captiousness, Cheating, Taking possession of others property, harsh words and cruelty (Manu Samhita). It is anger that causes maximum harm to the man himself. He does whatever he likes. When he is angry he is blind to reason, his vision is clouded, his body will tremble, his eyes will become red, his heart palpitation will become fast and he will have intense burning in his heart. He will try to cause maximum harm to his opponents. He cannot discriminate between right and wrong. People become angry, frustrated and angry that they are Ill. They commonly ask "Why me"? They may become angry at God, their fate, a friend, a family member, they may even curse themselves. With emotional persons, rupture, friction and quarrels. Occur frequently in their relation with others. If they do some action they are under stress. If they do not do any action they are still under stress. We show our anger towards our servants, inferiors and weak persons only but we do not show it towards our boss, superiors or strong persons. Why? Because we practice some sort of self-restraint on

account of fear. Under the influence of anger we commit crimes, do wrong actions, insult our elders. Anger that accompanies sustained hatred is very dangerous. Some emotional persons exhibit anger when they are insulted or ill-treated. Of course it is very difficult to control anger. First we should try to control the big wave of anger. First we should try to reduce its force, frequency and duration. We should not allow it to assume the form of a wave on the surface of the conscious mind. We should nip it in the bud when it is in the form of Irritability in the sub-conscious mind. The mind can be diverted by entertaining divine thoughts. We can do it by repeating some mantras or shlokas of the Gita. We should develop gradually the opposite divine virtues such as patience, love, forgiveness which is the noblest form of revenge. We should try to avoid the company of those persons or objects that tend to excite our temper. Words can do wonders and blunders. We should think twice before we speak. We should speak a few words, sweet words and loving words. It is speech that wounds a man more than action. A harsh word bleeds the heart not the body. The sufferings of the body are easily forgotten but not the sufferings of the heart.

Many people are in the habit of making simple things complicated and dissipating power and energy through fuming and fretting. The fretting and fuming has irritating and annoying quality. The famous saying. "Fret not thyself" is true for every individual. We do not realise how accelerated the rate of our lives has become or the speed at which we are driving ourselves. Many people are destroying their physical bodies by this pace, but what is even more tragic they are tearing their minds and souls to sheds as well. It is possible for a person to live a quiet existence physically and get maintain a high tempo emotionally. The character of our thought determines pace. When the mind goes rushing on pell-

mell from one feverish attitude to another it becomes feverish and the result is a stable bordering on petulance. The pace of modern life must be reduced if we are not to suffer from its debilitating over-stimulation and super-excitement. This over-stimulation produces toxic poisons in the body and create emotional illness. In a sense this is a pathetic generation, especially in the great cities, because of the effect of nervous tension, synthetic excitement and noise. Emotional control cannot be gained in any magical or easy way. We cannot develop it by merely reading a book, although that is often helpful. The only sure method is doing Pranayama exercises regularly, persistently and scientifically, in developing a calm control it is necessary to think of good thought that pass through the mind. It is also true that the mind can be quieted by first making the body quiet. A physically attitude can induce desired mental attitude.

Fear and Anxiety

Both fear and anxiety are alerting signals. Anxiety warns of impending danger and enables a person to take measures to deal with a threat. Fear is a similar alerting signal different from Anxiety. Fear is a response to a known, external, or definite or noncontractual threat. According to postfreudian pychoanalytic formulations, the separation of fear and anxiety is psychologically justifiable. The emotion caused by a rapidly approaching car as a person crosses the street differs from the vague discomfort of person may experience when meeting new people in a strange setting. The main psychological difference between the two emotional responses is the acuteness of fear and the chronicity of anxiety. In 1896 Downing gave description of acute fear merging into terror, "Fear is often preceded by astonishment and is so far akin to it. In both cases the eyes and mouth are

widely opened, and the eyebrows raised. The frightened man at the first stands like a statue motionless and breathless or crouches down as if instinctively to escape observation. The heart beats quickly but it is very doubtful whether it than works more efficiently than usual so as to send a greater supply of blood to all parts of the body. The skin is much affected under the sense of great fear and perspiration immediately exudes from it. The salivary glands act imperfectly. The mouth becomes dry. One of the best marked symptoms is the trembling of all the muscles of the body. The voice becomes husky or indistinct. As fear increases into an agony of terror we behold as under all violent emotions, diversified results. The heart beat wildly or may fail to act and faintness ensues. There is death like pallor, there is a gasping and convulsive motion on the lips a tremor on the hollow cheek.

When considered simply as an alerting signal, anxiety seems basically the same emotion as fear. As a warning of an external or internal threat, anxiety has life saving qualities. At a lower level, anxiety warns of threats of bodily damage, pain, helplessness, possible punishment or the frustration of social or bodily needs, of separation from loved ones of a menace to one's success or status and ultimately or threats to unity or wholeness. It prompt a person to take the necessary steps to prevent the threat or to lessen its consequences. Examples of a person's warding off threats in daily life include getting down to the hard work of preparing for an examination and running to catch the last train. Thus anxiety prevents damage by alerting the person to carry out certain acts that forestall the danger. How for an event is stressful depends on the nature of the event and on person's resources psychological defenses and coping mechanisms. All involve the ego, a collective abstraction for the process by which a person perceives,

thinks and acts on external events or internal drives. A person whose ego is functioning properly is in adaptive balance with both external and internal worlds. If the ego is not functioning properly, the person experiences chronic anxiety.

In yoga fear is termed as negative vritti or modification of the mind. It may be due to ignorance. Fear saps our energy and creates confusion, hatred and worry. Any action done under the influence of fear will be done in a confused manner. It is only when Deha Adhyasa (Identification with the body) vanishes by the knowledge of the self that one becomes fearless. Fear comes of ignorance and duality. Fear is the result of a mind which is filled with passions and attachments. Where there is attachment to body, wife, son and property there is fear.

Another serious flaw of man is pride. A little possession of merits, wealth, beauty, strength, intelligence, status, intoxicates a man. In yoga pride is considered an impure vasana. This is an obstruction to the attainment of knowledge. Pride thickens the veil of ignorance, clouds the vision and dilutes the positive emotions. It is easy to teach a man who does not know, still more easy to teach a man who is humble but very difficult to teach a man who is suffering from the element of pride, vanity and arrogance. As soon as the practitioner of yoga is free from selfishness vanity and pride he will soar high in the realms of joy and peace. History is replete with innumerable examples of persons who had to see the doom and death due to the element of pride.

Hatred and Jealousy

Hatred and jealousy are the negative vrittis of mind. The effect of Hate is repulsion and the effect of love is attraction. In our daily life we see friends, acquaintance,

and relatives who breed hatred and jealousy. Brothers fight and go to law courts, clerks in an office back-bite and ereate tales against their boss and colleagues. Jealousy eats the inner vitals of man as canker eats the rose. A jealous man has no peace of mind. He feels jealous of his neighbours, friends and relatives. His mind is always disturbed because of the disturbed emotions. He gets happiness over the sorrows of others, the sufferings and calamities of others. His mind is full of malice, greed, perversion, base vibrations and impurity. Happiness of others irks him. A boil with foul pus can be rendered clean in a short time by using antiseptic disinfectant but it is very difficult to remove the stink of jealousy in the mind. Those who harbour thoughts of hatred, jealousy, revenge and malice are under the spell of negative emotions and negative stress. They cause unrest and Ill-will amongst men. Our thoughts move with tremendous velocity. The thoughts and feelings of jealous persons are like wireless message broadcast in the ether and are received by those minds which respond to such vibrations. The Ideas of a jealous person are Inverted and the mind perverted. There is a law in psychology. The mind becomes that which it thinks upon. A jealous man is in the habit of finding fault in others. According to yoga philosophy revengeful or vindictive attitude is a form of hatred. The vritti of paying in the same coin tit for tat is also a form of hatred. The vritti that comes out of the mind, "Everyone should undergo the same suffering I had" is jealousy. A practitioner of yoga should give up the negative thoughts negative emotions and vidictive attitude of mind. He can remove the stinks of these negative emotions by meditation. Meditation has power to develop power of endurance to a considerable degree. The importance and powers of meditation have been discussed in a separate chapter. The stream of consciousness flows indifferently along two parallel channels, the good and

the bad. We will have to direct the whole stream of consciousness towards positive side with the help of meditation. If a man does not possess self-control, politeness, he is no better than a brute. Jealous people feel defeated by the every day problems of life. They struggle with a sense of resentment at what they consider the "Bad breaks" of life. It is pity that they desire for something which they don't deserve. They feel delighted over the hardships and tragedies of others. Yoga philosophy teaches the cultivation of peace of mind not as an escape from life but as a power centre out of which comes driving energy, positive emotions, positive thoughts for constructive personal and social living. Yoga also teaches a hard, disciplinary way of life and adoption of great values of life.

Emotion is the motive power like the steam of an engine. It helps us in our evolution. It is emotion which gives a push for action or motion. It is a blessing but we must not become slaves of our emotions. We must sublimate our negative emotions and evil impulses with the help of meditation which is a great medicine. The image of the sun is not seen in the muddy water. Similarly the image of the true self of man is very clear. If his mind is sattvic (pure). If his mind is filled with negative emotions and passions, he will always be under stress and the image of his true self will always be disturbed and discorted. Jealous person are scandal mongers, curiosity-mongers and mischief-mongers. They always try to set up discord, discharmony and unrest. A scorpion has a poison in its tail. A snake has the poison in its teeth. A mosquito has the poison in its saliva. But a jealous man has the poison in his emotions. Yoga alone provides panacea for making man happy in any place and under any circumstances. Yoga says that love begets love and as one lamp lights another and does lose any part of its light so a noble-minded man makes another man noble-minded.

Obstinacy and lust retard the spiritual growth or evolution. Obstinacy is a form of conceit or arrogance that follow lust. They are Anger, fear, pride, jealousy, prejudice, sensuality, Intolerances, laziness hatred and drinking our negative emotions will try their best to taint our heart which will keep us under stress. Truth is good but Truthful living is greater than truth. If a practitioner of yoga does not follow yoga ethics, he cannot hope to get any success in yoga. Very often a practitioner of yoga experiences many stresses due to his own flaws and follies like disappointment, desdain, doubt, lack of mental energy, sloth fullness, craving for sensual objects which come as obstacles in his way. He should not feel discouraged patanjali yogi has prescribed EKA- Tattwa Abhyasa i.e., practice of concentration and meditation to overcome these flaws. This will generate peace of mind and will destroy hatred and jealousy.

4

Stress and Sleep Disorders

Stress is a regular, recurrent, easily reversible state that is characterized by relative quiescence and by a great increase in the thresh hold of response to external stimuli relative to the waking state. Sleep is a physiologic state of relative unconsciousness and inaction of the voluntary muscles. Sleep is made up of two physiological states, non-rapid eye movement (NREM) sleep and rapid eye movement sleep (REM). In normal people NREM sleep is a peaceful state relative to waking. The pulse rate is typically, slowed 5 to 10 beats a minute below the level of restful waking and is very regular. Respiration is similarly affected and blood pressure also tends to be low, with few minute to minute variations. The resting muscle potential of the body musculature is lower in REM sleep than in a waking state. Episodic, involuntary body movements are present in NREM sleep. There are few rapid eye movements, if any, and seldom any penile erections in men. Blood flow through most tissues, including cerebral blood flow is slightly reduced. RHEM sleep has also been termed "Paradoxical sleep". Pulse respiration and blood pressure in humans are all high during RHEM sleep---much higher than during NREM sleep and often higher than during waking. Brain oxygen use increases during REM sleep. The most distinctive feature of REM sleep is dreaming. Dreams

during REM sleep are typically abstract. Dreaming does occur during NREM sleep but it is typically lucid.

The function of sleep have been examined in a number of ways. Most investigators conclude that sleep serves a restorative, homeostatic function and appears to be crucial for normal thermoregulation and energy conservation. As NREM sleep increases after exercise and starvation, this stage may be associated with satisfying metabolic needs. Worries, anxieties, stresses, fear, threat, depression, noise, calamities can not only disturb sleep but also create many problems. Lack of sleep can create irritability, confusion, lack of mental concentration, hyperacidity, mental anxiety, High blood pressure. Most of the people have experienced sleep,. Disturbance and sleep disorder during their lifetimes. Some people are in the habit of taking a nap after lunch. Naps taken at different times of the day differ greatly in their proportions of REM and NREM sleep. In a normal night time sleeper, a nap taken in the morning or after lunch includes a great deal of REM sleep, where as a nap taken in the evening has much less REM sleep. Sleep patterns are not physiologically the same when people sleep in the day time. The psychological and behavioral effects of sleep during day time differ as well. Individual sleep requirements vary. Many people are long sleepers and require 9 to 10 hours of sleep at night. Four major symptoms characterized most sleep disorders, Insomnia, Hypersomnia, parasomnia and sleep-wake schedule disturbance. Insomnia is difficulty in initiating or maintaining sleep It is the most common sleep complaint and may be transient or persistent. A brief period of Insomnia is most often associated with mental stress and anxiety. Persistent insomnia is a common group of conditions in which the problem is most often difficulty in falling asleep rather than in remaining sleep. This insomnia involves two problems somatized tension and anxiety.

Hypersomnia is a condition, probably toxic in which one sleeps for an excessively long time. It is different from somnolence in which one is always inclined to sleep. Anxiety, tension, muscular environmental changes, depression, schizophrenia can be the causes associated with Hypersomnia. As with insomnia, hypersomnia is associated with borderline conditions, situations that are hard to classify. Transient and situational hypersomnia is a disruption of the normal-sleep-wake pattern. It is marked by excessive difficulty in remaining awake and a tendency to remain in bed for unusually long periods or to return to bed to nap frequently during the day. The pattern is experienced suddenly in response to an indentifiable recent life change, conflict, stress, tension, loss and is much less common than Insomnia.

Parasomnia is an unusual and undesirable phenomenon that appears suddenly during sleep or that occurs at the threshold between waking and sleeping. Parasomnia usually occurs in the last stage of sleep and is thus associated with poor recall of the disturbance. Worry, anxiety, and mild stress can be the causes of parasomnia.

In non-organic Insomnia, the individual complaints of difficulty in falling asleep, difficulty maintaining sleep or non-refreshing sleep. The sleep disturbance occurs at least one month. The sleep disturbance results in marked personal distress or interference with personal functioning in daily living. In non-organic hypersomnia the individual complaints of excessive day time sleepiness or sleep attacks or sleep drunkenness. This sleep disturbance occurs nearly everyday for at least one month. The cause being temporary tension and stress which appears due to distress, grief or interference with personal functioning in daily living.

Then there is another active disorder of sleep called somnambulism (sleep walking). It is a disorder of sleep involving complex motor acts, that occurs primarily during the first third of the night but not during rapid eye movement of the sleep. It is a form of hysteria in which purposeful behavior is forgotten. During an episode, the Individual has a blank, staring face, is unresponsive to the efforts of others to influence the event or to communicate with him or her, and can be awakened only with considerable difficulty.

Another disorder of sleep is called "Night terror" OR "Sleep terror". In this condition, the individual gets up from sleep with a panicky scream and intense anxiety and stress and hyperactivity such as heart pounding, rapid breathing and sweating. The episode occurs generally during the first third of sleep. The duration of the episode is less than 15 minutes. The individual has limited recall of the event. Chronic stress and chronic anxiety can be the causes attributed to this condition.

Night mare is another sleep disorder which implies a terrifying dream in which one is unable to cry for help or to escape from a seemingly impending evil. The Individual wakes from nocturnal sleep or naps with recall of intensely frightening dreams usually involving stress. Depression, threats to survival security or self-esteem. The awakening may occur during any part of the sleep period but typically during the second half. Upon awakening from the frightening dreams the individual rapidly becomes alert.

In some sleep disorders cause is not known. Narcolepsy is a sleep epilepsy called paroxymal sleep. A sudden uncontrollable disposition to sleep occurring at irregular intervals with or without exciting cause.

Another sleep disorder caused by drug abuse and stress is Narcolepsy. If consists of excessive day time

sleepiness and abnormal manifestation of REM sleep occurring daily for at least three months. The REM sleep includes hypnagogic and hypnopompic hallucinations, cataplexy and sleep paralysis. The appearance of REM sleep within 10 minutes of asleep onset (sleep onset REM periods) is also considered evidence of narcolepsy. This disorder can be dangerous because it can lead to automobile and Industrial accidents. Narcolepsy is neither a type of epilepsy nor a psychogenic disturbances. Narcolepsy can occur at any age it most frequently begins in adolescence or young adulthood generally before the age of 30.

Then there are breathing-related sleep disorders. Such disorders are characterized by sleep disruption leading to excessive sleepiness or insomnia that is due to a sleep related breathing disturbance. Breathing disturbance that may occur during sleep include apneas, hypopneas, and oxygen desaturations. These disturbances can cause insomnia but more commonly produce hypersomnia. Many people older people and obese people, can have more respiratory problems in sleep than when awake. Sleep refers to the cessation of air flow at the nose or the mouth. Sleep apnea can be a dangerous conditions. It is thought to account for a number of unexplained deaths and deaths of infants and children. It is also responsible for many pulmonary and cardiovascular deaths in adults and in older people. Episodes of sleep apnea can produce cardiovascular changes. Including arrythmia and transient alterations in blood pressure. The insomnia is more common in women than in men. In clear cut cases in which the stress and anxiety have psychological roots, meditation often relieves the insomnia. The insomnia associated with major chronic mental stress disorder involves normal sleep on set but repeated awakenings during the second half of the night and premature morning

awakening, usually an uncomfortable mood in the morning. Morning is the worst time of day for many patients with chronic mental stress.

Yoga Nidra

Yoga Nidra is a science of sleep and Relaxation which enables us to dive into the subconscious mind thereby releasing mental tension and emotional stress. Yoga Nidra (YN) is sleep with a trace of Awareness a state of mind between wakefulness and dream. Visualising ability is the ultimate point in Yoga Nidra. Yoga Nidra can open the deep phases and recesses of mind. Our anxieties are like toxins lying in the deeper layers of consciousness. Which have been trying to find outlet. During the practice of Yoga Nidra, one appears to be asleep but the consciousness is functioning with awareness. Yoga Nidra will be more effective if practised in Shavasan. Yoga Nidra is the purgation of emotions and stresses. It is Yoga Nidra with slow and long breaths which can induce sound sleep. It would be better if yoga Nidra is practised after Asans which relieve the stiffness of muscles and tension. In Shavasan pose, one rotates one's awareness from the toe over every limb and organ of the body which is to be followed by deep breathing and relaxation. Deep breathing, concentration and relaxation will give soothing relief to mind. Yoga Nidra brings sleep like feeling to the mind full of tension and worries. There are four stages in Yoga Nidra.

1. Jagrat (Wakefulness)
2. Swapna (Dreaming sleep) Alpha waves.
3. Sushupti (Deep non dream sleep)
4. Turiya (Return to near wakefulness)

Millions of people take tranquilizers, pills and drugs and drinks to get sleep. Sleep also eradicates stress and

tension. Brain, cells called neurons undergo fatigue after prolonged work and toil, and the input from the muscles to the brain is reduced. Sleep and sound sleep is the best releaser in life. Sleep helps in relaxation, regeneration of the mind and eases tension and stress both mental and physical.

5

Stress Related Hypertension and Other Diseases

Our life has become full of stress and strain. In every profession stress or No stress. That is the question. If we perform any action we are under stress if we do not perform, we are under stress. We are often reminded of Shakespeares famous lines:-

Time is out of joint

O, cursed spite, Ever I was

Born to set it right.

Any external or internal influence that has an adverse effect on the correct functioning of the body and brain can be due to stress. These influences include physical factors such as disease or injury or mental ones conflicts and anxiety. Some degree of stress is required to keep people alert. Problems develop when a person can no longer handle the emotional, mental and physical stresses encountered in everyday life. Stress may not be the cause of many diseases but it can be a contributory cause to many ailments and physical disorders. Chronic stress can be the cause of many diseases and disorders, stress produces changes in some as well as in psyche. Different systems of the body are affected to a greater or less degree. The various symptoms can be classified into

a. Physical, b. Emotional, c. Psychological. Physical symptoms are the conspicuous complaints in majority of the patients. Some of the symptoms are fatigue, insomnia, feeling, tired, anorexia, a loss of body weight, indigestion, not flushes, vague aches and pains in the body, tingling and numbness, urine frequency menstrual changes, sexual diminishes, cardiovascular disturbances like pain in the chest, palpitation, headaches, giddiness, blurred vision, excessive perspiration etc.

Emotional symptoms are many and vary from person to person. Those who are sensitive and emotional are more prone to stress. Some of the emotional symptoms are despondency or gloom, lack of interest in activities lack of confidence, irritability, fears (phobias) haunting ideas (obsession), anxiety, feelings of guilt and remorse of sin, inferiority complex, feelings of worthlessness. Psychological symptoms evolve gradually and remain unnoticed for sometime. Some common psychological symptoms are indecisiveness neglect of work and duty, forgetfulness, impaired concentration, delusions of various types, negativism and stupor. Agitation, shunning social responsibilities, illusions and hallucinations, worries, anxieties, paranoid etc.

Lot of research has been done on neurotransmitters. Recently the scope of investigations has widened to include changes in number of important hormones. Most endocrine systems are controlled by the biogenic amines, norepinephrine serotonin and dopamine all play a part in the timing and regulation of release of hormones, and the hormones themselves modulate the nerve cell activity of these neurotransmitters studies have shown that hormone secretion is influenced by neurotransmitters that are in limbic centers and conversely, alternations in neurotransmitters functions effect hormone secretion. Mood changes occur in

association with endocrine disorders caused by stress and depression. Studies show that people who suffer from diseases of the thyroid and adneral glands have many symptoms similar to those seen in stressed and depressed states. Hyperthy roidism (increed thyroid function) can present many of the features of which are similar to major stress and depression. Another hormonal disorder called cushing's syndrome is characterized by excessive cortsol secretion and can produce symptoms such as fatigue, loss of appetite and insomnia. These are all common symptoms of stress and depression and are associated with a disturbance and pituitary glands.

The Hypothalamic—Pituitary—Adrenal axis (HPA) is the endocrine system most extensively studied 50 years ago. Dr. Watter Cannon discovered that the neurotransmitters epinephrine was released in response to stress. He made this finding the basis of his hypothesis that this substance mobilized the organism for "fight or flight". Some years later Dr. Hans Selye called attention to stress of the adrenocortical hormone coristol. While he was concerned chiefly with responses physical stress. The neuroendocrine system that regulates the release of cortisol helps the body remain flexible sot that it can respond appropriately to changing environmental conditions—whether it be alterations in the day night cycle, season changes stressful life events or sudden threat to survival. This system works to establish an intricate moment to moment balance by a series of feedback functions that are orchestrated and nervous system. For example if a person encounters a man with a gun in a darkened halfway the eyes relay the threat to the brain, and the brain registers fear or anger. The fearful event is translated into chemical signals that move through a complex path way that leads through the limbic system. Thus this emotional response to a

stressful or dangerous specific. Neurochemical response. Psychological stress was a powerful stimulant of cortisol levels were measured in normal subjects exposed to experimental psychological stress, as well as in people whose real life circumstances involved extreme stress. It was discovered that anticipation of any frightening or complicated task, including parachute jumping, hospitalization or landing an aeroplane is a potent stimulant of cortisol.

Sometimes stress becomes cause of a disease and some times a disease or disorder physical or mental creates stress.

In this age of "Anxiety and Hurry" Hypertension disease is increasing rapidly and young and old, men and women become victims of this disease. This disease can cause stress and stress can be a contributory cause of the disease. Blood pressure is the force exerted by the blood against the walls of the blood vessels. If the arteries or capillaries are weakened and become sick. Circulation of blood cannot be natural through these, the heart then has to be overactive and give extra pressure to circulate blood through them. This extra pressure is called hypertension or high blood pressure. The blood pressure varies from person to person and in the same person from time to time. Rise in pressure frequently occurs during emotional excitement when the blood pressure remains above the normal range it is known as High blood pressure. One of the causes of Hypertension can be stress or depression and hypertension is one of the commonest causes of disability and death. The mechanism of death from high blood pressure is usually one of three varieties, heart failure, a vascular accident in the brain or kidney failure. It is more common amongst the urban population as compared to the rural population. Most people are unaware of this disease and it comes to notice when a

person goes to the doctor for checkup. Stress and depression can increase the blood pressure. The longer it persists, the greater is the damage done without the person being aware of it.

Stroke means a variety of things but in general the term refers to sudden brain damage caused by a hemorrhage of a blood vessels in the brain a thrombosis or clot formed by hardening of the vessels walls or an embolus, a clot that gets into the blood stream from another diseased or injured part and blocks a brain artery. The brain area affected stops functioning. Stroke affects both young and old, men or women. The seriousness of brain damage from stroke can be realized by comparing strokes in the brain with those in other parts of the body. For example a small clot lodge in the lung, all other parts of the lung will function. Sometimes minor stroke occur which may cause some changes in the person's behaviour, speech, memory or intellect. These minor stroke are due to small clots in the arteries of the brain. Minor and major strokes can occur when a person is under mental tension and chronic emotional stress. The stroke problem is almost overwhelming because of its many facets and its conflict with our modern urban way of life. The stroke victim may be disgusted with himself as he begins to recognise his memory failures. He condemns himself and feels frustrated by the unkind comments from his friends and relatives. When he is repeatedly blamed for his unavoidable forgetfulness, he develops deep morbid depression.

Stress can be a major cause of acidity or Hyperacidity. Oxygen when being burnt in the digestive process, turns into carbonic acid gas. There are number of gastric glands by the side of the blood vessels throughout the alimentary system. These glands are motivated with carbonic acid gas. When food comes down in the

stomach, these glands grow active and there is profuse secretion of digestive juices. This juice is acid. When food is taken under mental stress or with poor or no appetite, these glands are forced to overwork with the chemical help of these secretions the food that cannot be assimilated passes to the duodennon and small intestines where an enhanced process of burning starts up and pancreatic juices play the main role here. To assist the pancreatic juice other secretions from the subsidiary glands—like bile etc. combing here. When this assistance also fails to complete the job, the undigested matter decomposes and eventually mixes with the wasted (Ptomain) bile in the intestines and turns into virulent acid poison—vitiating the blood. When this acid poison pushes upward, burning of chest and throat is reported. It neutralises the alkaline property of blood and creates ulceration in the stomach and duodenum. Nerves, muscles and other vital organs soon get poisoned and weakened as soon as the vital fluid is contaminated by this virulent ptomain and toxin of rotten acids damaging the system. This acidity in the maturing process causes gastralgia, duodenitis, duodenal ulcers and biliary colic.

Mental stress not only causes heart problems but also results in a three fold increases in the risk of death. If one is already suffering from some heart problem. A study published in (March 2002). Issue of "circulation" shows that psychological stress can inhibit the flow of blood to the heart, a condition called ischemia and increase the risk of death for those who are suffering from coronary artery disease. Dr. David Sheps in his research on "Stress and Heart" has mentioned that "Patients who had Ischmia in response to mental stress had a three fold increase in the risk of death compared to people without mental stress". Here some distinction is to be made between acute stress and chronic stress. Normal

individuals may be at higher risk for cardiovascular events. If they are exposed to certain kinds of chronic stress such as depression but not if they are exposed to one or two-time stressor. Individuals with cardio-vascular problems may be at higher risk from both types of stress.

Diabetes (Sugar Diabetes, diabetes mellitus) is a complex metabolic disorder in which the pancreas fail to produce enough effective insulin. Insulin is a Hormone that removes sugar from the blood, enabling it to be stored in the liver and muscles. Without this process, glucose levels in the blood rise alarmingly and body cells lack energy. Cells use fats and proteins as an energy source, and this produces toxic waste products called ketones. If the blood sugar is allowed to remain uncontrolled for a longer period and sugar is excreted by the kidney through urine and also when vital fluids, due to malfunctioning of the kidneys, escape through urine excess, concentration of sugar in urine damages the filtering functioning of the kidneys.

Sometimes mental symptoms such as fear psychosis, Neurosis, stress can be detected in diabetic patients. In some acute and chronic cases, thinking gets perverted. The patient feels emotionally upset and is not able to attend social functions etc. It is necessary for the diabetic not to feel mentally tense, excited or disturbed.

Hardly there will be any person who has not experienced the pangs of Headaches either simple or chronic primary or secondary. Tension and stress have become part of our life. Tension in the popular language can be defined as an excessive demand on physical and mental energy resulting in anxiety, anger, distress, fear, frustration and irritability. All these cause a rise in blood pressure and Headache. Today, in every walk of life, we undergo a little or big amount of tension and stress. Be

it a housewife, a working women a professional, an employee, a farmer, a business executive, a teacher or a student. A stressful life style resulting form day today problems of finance, education, family, work, travel, insecurity of job—all these can result in temporary or chronic headache. Migraine is a very severe throbbing headache usually on one side of the head, that is often accompanied by disturbances in vision, Nausea, and vomiting. Migraine is a common condition and seems to be triggered by any one or several of various factors. These include anxiety, tension, stress, fatigue loud noises, dazzling lights and certain foods. Migraine may involve constriction followed by dilation of blood vessels in the brain and an outpouring of fluid into surrounding tissues or a disturbance of the balance serotoning, a neurotransmitter. Another type of Headache called sex-headache occurs more in men than in woman at the time of orgasm. Sometimes due to sex-disorders and coital defects this type of headache can occur. Sexual stress and sexual anxiety can also give rise to this type of headache. Another type of headache called nodular headache the patient feels radiating pain in the head accompanied by nodular swelling in the spienius, frontails, trapizius and other muscles. This type of headache can appear anytime and last for hours. Temporary or chronic stress can give rise to this type of headache. Then there is Horton's headache. It is more or less the same as migraine. The patient gets shooting pain in one part of the head. But the attacks occur infrequently and the pain lasts for an hour or writers get this type of headache due to stress or tension. Another type of Headache called Neurologic headache can be due to stress or tension. Neuralgia means nerve pain. In this type of headache, the patient feels pain of a severe or stabbing character. Degeneration neuralgia is caused by the degenative changes in the nerve or its central origin. The patient feels piercing and severe sudden

pain in check or jaw on one side. The pain lasts for a couple of minutes and the pain is aggravated by talking, chewing or exposure to wind.

In the current socio-psycho-political milieu a woman has to face stress and strain, strife and struggle at every step in every walk of life. She has to face headache within and without from internal and external environment. Headache is four times more common in women than in men. Prior to puberty and after menarche (the girls first period) migraine and cluster headache occur more frequently in women. Women's amount of stress and susceptibility to cluster headache and migraine increase at the time of menarche, at the time of menarche, at the start of each menstrual cycle, at the time of menopause. In the menstrual period ladies often get tension and stress which can be the cause of menstrual headache and menstrual migraine sometimes mild, sometimes severe. Many women get more stress and more headaches during the first four months of pregnancy. Some women develop chronic stress due to ovarian cancer. Most of the women have a different experience of menopause. Most of the women experience certain symptoms. Some hardly notice any change while others experience moderate hot flushes and stress. It is due to stress that they have sleep disturbances anxiety depression loss of libido (sexual desire) headache, backache and vaginal dryness. Since women are more sensitive then men so they are more prone to stress depression and psychiatric disorders. A small degree of anxiety is common in most people's lives but it can develop into an emotional disorders characterized by feelings of fear and terror. Majority encephalomyelitis (ME) a disorder in which there is muscular pain, fatigue. Loss of concentration, blurred vision due to stress and depression.

By virtue of physiological and pathological changes in the female reproductive system, the backaches are more frequent in women. Low backache is common in girls before the starting of the periods. Backache is also common ailment in pregnancy particularly during last three months. It is due to stretching of ligaments and muscles and the change in the spinal curvature due to the enlargement of abdominal. Low backache is more common among middle class women due to repeated pregnancies. All backaches can get aggravated by chronic stress and tension. Menopause is a stage in the life of women when many changes take place in the body, reproductive system and social environment. It is a stage of stress.

Today, the world's biggest problem at every level is stress created by pace and style of modern living. Neurasthenia has become the world's number one disease. Neurasthenia is "dis-ease" or lack of Ease manifesting all of subconscious, destructive tendencies and is sometimes called Destructive death wish. Today many patients complain of backache which is due to tension or depression. Now a days most of the diseases are considered as psychosomatic. It has been established in medical science that long standing stress and depression can bring about a chronic tension in the body muscle.

Emotional stress anxiety and tension decrease peristalsis. In addition people with stress like to eat low fiber diet, often at irregular timings. This disturbs the digestive system. It also results in constipation with women premenstrual tension occurs upto 10 days before the menstrual cycle. During this period, period of stress, the girl shows the symptoms as headache, nervousness, irritability, depression and constipation.

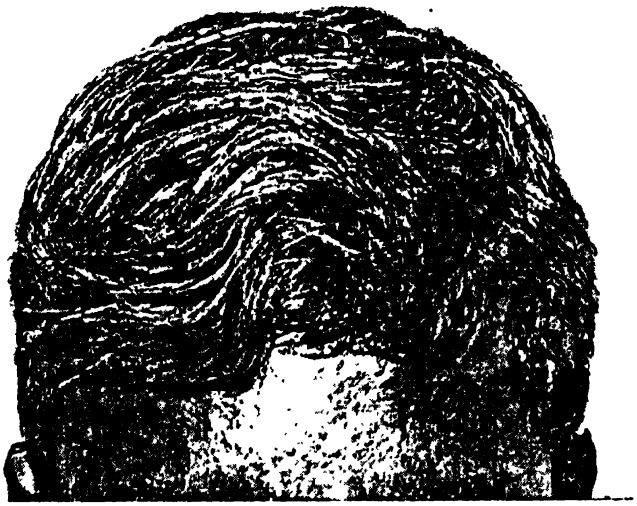


Fig. 5.1: Premature Cavities (Male)



Fig. 5.2: Premature Cavities (Female)

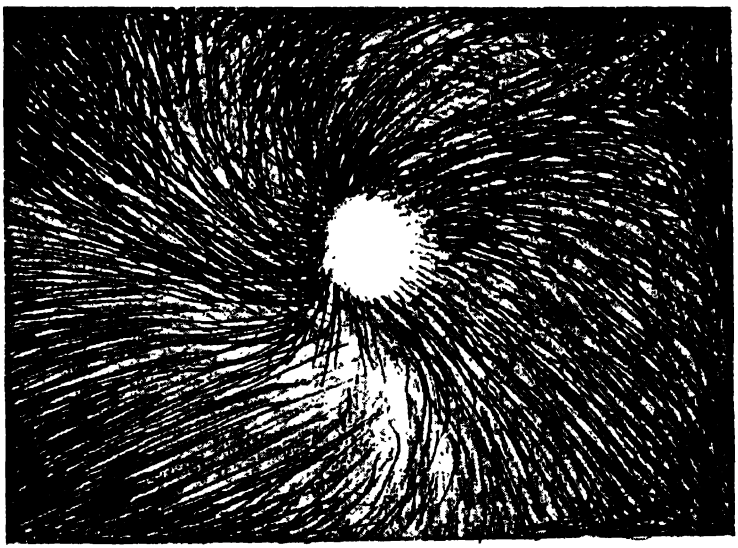


Fig. 5.3: Alopecia Cutis Congenita

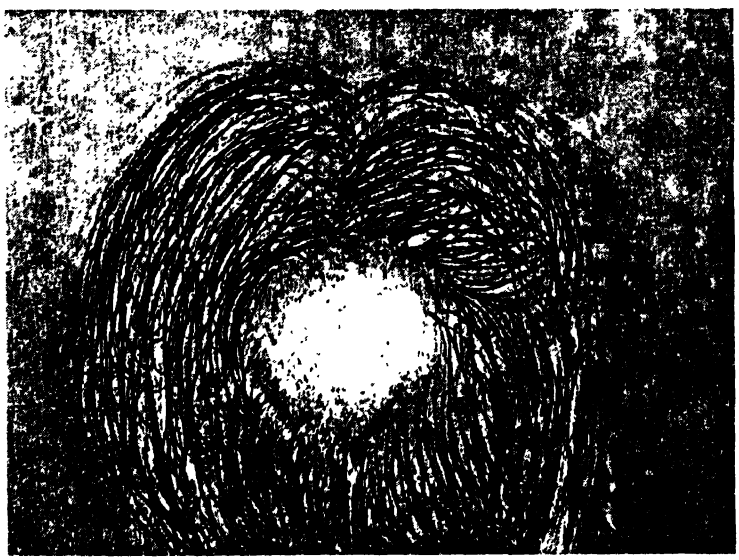


Fig. 5.4: Alopecia Areata

Stress can be one of the causes of hair loss and some skin-diseases. People who are unable to cope with the pressure of life, constantly worry about the day to day problems at office or at home, are constantly under stress and emotional conflicts. Hence they are easy victims to excessive hair loss.

Because of accumulated tensions in the mind, the muscles in the scalp and neck constrict. The blood circulation is thereby impeded, resulting in the suffocation of the hair cells which results in the falling off of hair. Skin diseases have innumerable causes. Besides virus, parasitic, bacterial, fungus, circulatory, diseases, disorder of the sweat glands, drug-eruptions, heredity and climatic causes, stress can be one of the major psychological causes of some skin diseases. Among hair disorders premature canities is diffuse and extensive greyig of hair. It is premature if it occurs before 25 years of age. It may be hereditary or associated with autommune diseases, malnutrition, hyper thy roidism. But worry, anxiety and stress can aggravate (Fig. 5.1) the disorder. Alopecia (Baldness) is another hair disorder which implies a common condition of congenital absence or thinness of the hair and may be confined to the localised areas of the scalp or beard or may extend over the whole scalp. Male-pattern baldness is caused by androgenic stimulation of the hair-follicles. It begins with a uniform fronte-temporal recession the vertex showing hair loss as well. In advanced cases these two areas become confluent and in more severe cases only the lower parietal and occipital areas are spared it also occurs in women but in them it begins at a later age, (Fig. 5.2) progress much less rapidly and consists of a diffuse thinning rather than complete loss. In Alopecia (baldness) the hair fails to grow. There are different varieties of Alopecia. Alopecia Areata is a large patch of hair loss over the scalp which appeared suddenly and

enlarged rapidly (Fig. 5.3) such a condition may arise with many causes but the cause of emotional stress cannot be ruled out. It is the mental stress which aggravates the disease. Then there is another variety of alopecia called alopecia cutis congenita (Fig. 5.4). In this disease there is a congenital absence of skin and hair over a small area on the vertex. This disease also can be the result of chronic emotional stress. Stress can also lead to change in hormones that may lead to Acne.

In many chronic skin diseases namely eczema, the stress can be one of the important factors for aggravating the disease. Eczema is inflammation of the skin that causes itching red rash and often small blisters that become encrusted. This may be followed by the skin thickening and then peeling off in scales. There are several types of eczema. Nummular Eczema is a constitutional eczema round or oval, coin like patches (hence the term nummular) large plaques formed by coalescence or extension and discreet papulovesicles. The sites of election are the calves shins, fingers and hands but in severe cases the thighs, upper arms and trunk may also be involved. It is a disease of adult life. In women it is usually seen in early adult life. This is associated with mental and physical stress.

Tension and stress can create suicided tendency in an adolescent can create tension and stress in his personality. The events may include the break up of a romantic relationship, disciplinary problems with his parents, difficulty with school or college, failure in the examination the loss of a loved person in family may serve as precipitants. Stress in an older person may manifest different symptoms than in a younger adult. The aging person often reports less change in mood and attitude and more of the somatic complaints such as constipation, headaches and fatigue. Moreover the

elderly stressed person may appear confused, have memory loss and be agitated.

The new science of psychoneuroimmunology (PNI) measures the connection between our mind (attitudes, beliefs and emotions) and the health of our organs. According to PNI, grieving stress and depression have all been proven to lower our body's immunological fighter cells dramatically. Our immune system strength reflects our emotional and mental coping mechanisms.

Life style and psychological stress can weaken our immune defenses increase the likelihood of catching infections and raise our risk of many kind of diseases. Excessive worry, stress and depression can accelerate aging and shorten our life-span.

6

Society Drugs and Drug Addiction

"No wind favours him
Who has no destined port".

—Montaigne

From time immemorial man has devised and discovered innumerable drugs from plants, minerals, animals and synthetics. His instinct of curiosity and spirit of inquisitiveness have always impelled him to find out any substance for the purpose of diagnosis, prevention, relief, ecstasy and cure of pains and pangs, depressions and diseases. During fifty years, there has been "drug explosion". Many modern drugs are developed in commercial rather in academic laboratories. But during last thirty years, there has been remarkable advancement in the understanding of drugs, drinks and diseases.

Drugs

Substances that affect the senses, have a history that goes back to the earliest days of mankind. Natural substances that act on the nervous system were discovered in the hoary past, alcohol to relax a weary mind, opiates to relieve pain and induce sleep, coca leaves to numb the senses and increases endurance.

The use of drugs has always varied from society to society and from time to time. The medicinal value of drugs was significant but their use was not limited to medicine. They came into widespread use in religious rituals. They were used to expand awareness, intensity of feelings, enhance appreciation, alter mood and increase capacity for love. But when abused or misused they also have had infinite capacity for destructiveness and creating social problems. Drugs outlawed today were not always viewed as detrimental to human health and welfare. In the nineteenth century, in the United states cocaine, opium and heroin were legal and readily available. Coca-cola contained cocaine for 17 years until it was replaced by cafleine in 1903. Nations that today seek to suppress the drug trade once fought to expand it. Drugs have found a place in fictional literature. However told of the forgetfulness that befell some of the Odyseen's crew in the land of the lotus eaters/ The famous fictional detective Sherlock Holmes injected a 7 percent solution of cocaine, which he found "transcendently stimulating and clarifying to the mind".

Drug may be defined as any substance (other than food) that produces a change in the physical and mental functions of an individual. There are different routes of drug administration drugs may be swallowed (eaten or drunk) chewed and absorbed through the lining of the mouth, sniffed and absorbed through the lining of the nose, inhaled through the lining of the nose and lungs or injected either beneath the skin, into the muscles, or into a vein. Some drugs can be taken in several different ways tobacco may be chewed, sniffed as snuff or smoked. While cocaine may be chewed in coca leaves, sniffed, smoked or injected.

Addiction is defined as a condition in which an individual enslaves himself to the tyrannical demands of a drug. It is a condition brought about by the repeated

administration of any drug, "Such that continued use of the drug is necessary to maintain normal physiological function and discontinuance of the drug results in definite physical and mental symptoms".

The drug abuse can be defined in two ways. One scientific expert defines drug abuse or misuse as "regular or excessive use of a drug to the extent that it is damaging to a person's social or vocational adjustment or to his health or is otherwise specifically detrimental to society". Apparently this definition seems to be sound. Most of the people would agree that use becomes abuse when a drug became damaging to a person's health, social relationship or job status or society in general. But this definition is not complete from practical point of view. For instance, a person who smokes three packs of cigarettes a day damages his health but most of us do not consider him a drug abuser. Most of the people do not think of nicotine as a drug at all. Similarly when a person drinks alcohol to the extent that it damages his or her health, marriage or job performance, he is ignored by others and is not considered a drug abuser. It has been rightly said that "One man's beverage is another man's drug. One country's drug is another country's medication, and one agency's subsidized crop is another bureau's focus for criminal law enforcement".

The second way of defining drug abuse is to use it as a dangerous drug. But we do not generally think of nicotine or alcohol as dangerous drugs because we have not been taught to believe that they are. The most widespread drug problem may be use of substances like diet pills, sleeping pills and tranquillisers for other than their intended purposes. Most of the people use sedatives, stimulants and tranquillisers mostly obtained through their doctors. These people use their drugs for legitimate medical reasons. Others intentionally use the drug to "get high". Still others unintentionally become

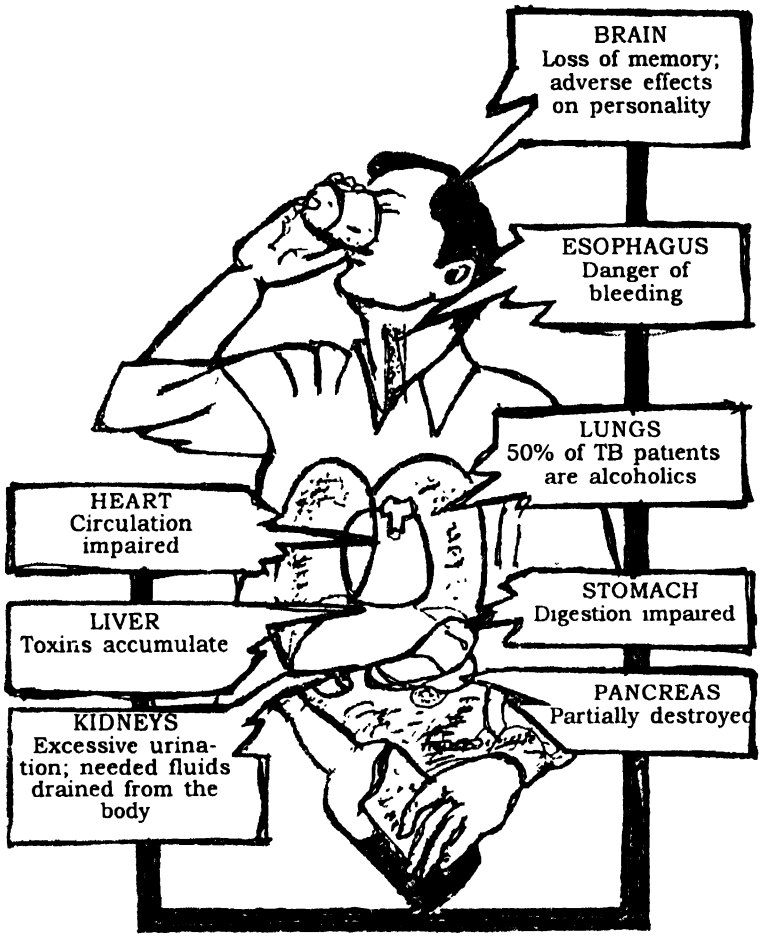


Fig. 6.1: Effects of Alcohol

psychologically dependent on the drugs, sometimes without even realising it. Some drug abuse in our society can be traced to the willingness of the medical profession to prescribe a pill for virtually every human ill. Whether drug abuse of this type is bad is a debatable question. If a given drug enables its user to cope with life, then they should use it as long as their performance

is not affected or impaired and their behaviour does not become undesirable, very few drugs can be considered totally safe. For example, in small quantities barbiturates do have a relaxing effect on an individual but heavy doze can prove harmful to health. Similarly small task that require alertness, and heavy dose of amphetamines can lead to weight loss and sleeplessness. People abuse drugs for many reasons but one of the main reasons is simply that we live in a pill-popping culture. Widespread drug abuse among the young stems from the pervasiveness of drugs in our society. Every day, young people see their parents and other adults "Enjoying" life with drugs and drinks. So the young learn to use drugs the same way that they learn.

The Administration of Psychedelics

The question how do psychedelics act cannot be answered without discussing how the body stores and releases its energies. A large part of the total energy store is situated in the muscular or store as glycogen in the liver. Another portion of the energy store is utilised in instinctive operations and digestion of food. The sexual apparants with its component urges utilises a further portion of the total energy. Emotional functions of various kinds consume their quota so do thought processes. A certain amount of energy is left which manifests itself in the level of total awareness that can range from deep dreamless sleep to the highest state of consciousness. All energies in the body are chemically bound. They are locked up in molecules of cellulose. To prevent the depletion of these energy stores, mechanism exists in the body which lock up the storage cites just as a careful mother locks up the cookies jar to prevent depredations by a naughty child. The storage organs correspond to six glands which are broadly divided into two parts, medulla and cortex, the liver, the pancreas, the thyroid

in the throat and pituitary at the base of the brain with its two lobes, anterior and posterior. The pituitary glands called the master glands, arouses to activise the other glands. But the pituitary is itself directly linked to that part of the brain called hypothalamus which in turn is linked to the roof brain, the cerebral cortex. The hypothalamus contains a master switch board which is responsible for the operation of the glands. The instinctive urges, hunger, thirst and sex urge are controlled and regulated by this part of the brain. Moreover, there are two large switches called "start switch" and the "stop switch" situated in this area of the brain. The start switch arouses one to activity and its operation induces pleasurable and delightful sensations. The stop switch arouses sensations which are unpleasant. The first system is called "Ergotropic" system which operates, motivates and incites activity, the second system "the trophotropic system" is inciting to rest, one who has slight acquiantance with the working of the mental switch board can obtain information about the operation of his own brain. He can distinguish one switch from another to detect the changes in the harmony of the glandular system and to recognise the release the stored... energies. One who has this piece of information feels the application and function of the psychedelic on the hypothalamine switchboard turning various switches on and off. They do influence centres regulating thirst, hunger sexual desire, respiration, digestion, temperature, sweating and the rate of the heart beat. Since the psychedelic function by liberating stored energies, their effect will depend on the levels of energies available. There are certain tribes in India who use peyote and prepare themselves in advance by fasting for increasing the level of sexual energy.

There is wide variation in the effects of various

addicting drugs and variability in individual reactions to them. But certain general characteristics of addiction can be observed.

There is overpowering desire, need or compulsion to continue taking the drug and to obtain it by fair means or soul. This compulsion lies at the heart of addiction. There is a subtle and often unrecognised transition from self-mastery to subservience. Once driven by this force, a person is no longer in command of himself, he is a mere power in the hands of a force which is beyond his will or control. There is tendency to increase the dose. This increase results from the phenomenon of tolerance, which is brought about by the body's ability to adopt to the effects of a drug that is used with some regularity. As adaptation takes, place, the body reacts only to larger doses.

There is psychological or sometimes a physical dependence upon the effects of the drug. Generally these drugs which cause psychological dependence are termed as habit forming and those drugs which cause physical dependence are called as addicting. The terms "habit farming" and "addicting" are closely related. It has been observed that withdrawal of various drugs ordinarily considered as merely habit forming (coffee, tobacco and alcohol) may be accompanied by definite physical symptoms. Psychological dependence rests upon a state of Euphoria which a narcotic drug creates. This is a general feeling of well being in the absence of any objective justification of such a feeling, persons who, because of an unsatisfactory adjustment to life, fail to enjoy normal happiness, are ready victims for drugs of various sorts. Finding that a state of euphoria may be arrived at synthetically and without effort, they turn to drugs. This aspect of addiction is the most serious because it involves the personality adjustment of the

individual.

Physical dependence results when the body undergoes physiological changes which cause it to become dependent upon a drug for the maintenance of its normal functioning. When the drug is withdrawn the body suffers a revulsion or a "withdrawal illness". Physical dependence is associated with various drugs but in case of opiate addiction it is present in its most severe form. Tolerance is another drug dependence syndrome. The person who is tolerant to a drug's action will for any given dose show a lesser reaction than the non-tolerant person. Extreme degrees of tolerance are likely to occur with heroin.

Another characteristic of addiction is a tendency to relapse. This tendency stresses the fact that addiction, once established is very difficult to overcome permanently. For example there is well known saying attributed to Mark Twain : "I can stop smoking anytime I want to, I have dome it a hundred times". In nine cases out of ten, the narcotic addict relapses into addiction after he has had a "cure". In his book "Drug Addiction", David Paul says, that the person who is most likely to take recourse to drugs is the "Inadequate personality". He describes this person as :

"The inadequate personality fails to conceive of himself as an independent adult and fails to identify himself with such normal adult goals as financial independence, stable employment and the establishment of his own home and family. He is passive, dependent, unreliable, and unwilling to postpone immediate gratification of pleasurable impulses. He demonstrates no desire to persevere in the face of environmental difficulties, or to accept responsibility which he finds distasteful". David Paul further suggests that such a person has two main goals in life, 1. Search

for pleasure, 2. The escape from adult responsibility. Drug addiction may be seen as a short cut for inadequate personalities to the attainment of both the goals. From this discussion of the characteristics of addiction it is clear that no hard and fast line can be drawn between substances which are addicting and those which are habit forming. Addiction is an appropriate term only if it involves damage to the individual to family, to society or to all.

Some specific signs and symptoms are listed below which are to be kept in mind while spotting drug abuse:-

1. Diminished drive, change from active performance in academic sports and daily routine.
2. Drowsiness or sleeplessness, lethargy, poor appetite, loss of weight, Nausea, vomiting and pain in legs and abdomen and poor concentration.
3. Very poor attendance at school or college.
4. Pale face, reddening of eyes and puffiness under eyes, slurred speech.
5. Untidy appearance and unsteady gait, clumsy movements, unusual delay in bath room, unusual smells, stains or marks on body, powders, tablets found in room of the young.
6. Temper tantrums, over reaction even to mild opposition, hostility, sudden changes of mood, irritability or aggression, anxiety, depression, emotional detachment and impaired memory.
7. Craving for money disappearance of money and articles from home increased evidence of telling lies and concocting tales.
8. Tinted finger tips and often small scars of burns on them.

9. Presence of needless, syringes, incense sticks, breath freshness strange packets in the room.
10. Rolled paper or pipes in the room.
11. Butts of marijuana cigarettes, seed or leaves in coat pockets.

In our country with different religions, castes and creeds, the abuse of different drugs either in crude (natural) form or in synthetic chemical form are abused by people. But all the drugs discussed here are not commonly abused. The reason being partly due to their non-availability and partly due to their high prices. The problem of drug abuse is being increasingly faced during the last ten years, especially because India is sandwiched between the two major sources of illicit drug supply, the golden crescent (Pakistan, Iran and Afghanistan) and the golden triangle (Burma, Thailand and Laos). In India, drug abuse is not a social problem as it is in European countries because, here the number of drug abusers is very small. In our universities, boys and girls abuse different drugs. Some girls use more psychotherapeutics (minor tranquillizers and sedatives) Asprin, Anacin, Codeine, APC prescribed by the doctor while as boys take drinks and drugs frequently, but a small number is found to be "dependent". If girls misuse legal drugs, abuse, the role of the family cannot be underestimated. There are traditional families and modern families. The traditional families adhere to the old values. Old things and old models, while as modern families believes in new, adventures new ideas and new methods. The ultra modern families have a tendency to allow the west. In the study of drug abuse among Delhi University students Dr. Davinder Mohan has said, "This drug abuse was a rule more among students who stayed away from their families---as opposed to those who did not. Those who were staying entirely on their own had

maximum drug use both in men and women. This shows the significant role of family.

Hallucinogens

Marijuana (Cannabis), Charas, Hashish (Bhang), Mescaline, Dom/Stp (Diosyam Phytamine).

Marijuana is a Mexican term for cannabis sativa or Indian hemp, a plant with a long history. In Arabia it is called hashish. In Persian Bhang and Indian Bhang, Ganja, Charas, or Siddhi. In Africa Dagga, in Morocco "Kiff", Bhang or siddhi are the dried leaves and small stalks of the plants. Ganja is obtained from the flowering stalk of the female plant. It is usually smoked in a pope. Charas is the resinous exudate from the leaves, branches or stalks. It is also known as "Grass" pot "weed" and other terms depending on the argot in fashion. It is also available in the form of crudely wrapped brown paper cigarettes known as "refers" "tea" "charge" "joints" and "sticks" some users in Panjab term it as "samosa" and "Bidi". However the code words and code terms change with the changing times and situations. The Chinese called it as a liberator of sin and at a later period they called the plant as "delight giver". Indians called it "People's drink" or prasad of Lord Shiva. In the nineteenth century, the western physicians discovered its medicinal uses. The drug was used to cure eye-pressure in glaucoma patients to reduce side effects in cancer patients, asthma and to control epilepsy. The yellowish green oil in the seed was used in the preparation of soap, lamp oil and paint.

Hashish, another component of Marijuana and other components popularly known as Charas, Ganja, Bhang are called "Psychedelic". The drug is not narcotic, is not habit forming and is mild in its action. The spirit of hashish is playful as a kitten jocular performing queer

tricks. The tricks are associated with the self-sense. It gives the user a sense of "I am". As with the face so with the rest of the body, limbs of the user become free, independent as if they had taken of a life of their own. To the user, all the experience comes in a wave and the different another in proper centre and the user finds himself literally "Inspired", he gulps down great draughts of air as if to fill his system from the inexhaustible reservoir of cosmic prana. This air gulping has been experienced and observed by many. One University student, while giving his experience says, "Hotter and faster came my breath. I seemed to pant like some tremendous engine". This stimulation of the action of the heart. Awareness of the action of the heart may become acute and even alarming. Another student had the same experience, "The beating of my heart became loud, vibrating and faster. I gave myself up for lost, my senses were perverted and I thought that my life would end within a couple of minute". Hashish enhances all emotionality positive and negative. Tear, anxiety, distrust can be so augmented by Hashish as to make the whole experience a most unpleasant ordeal. But joy or delight are similarly augmented to the level of ecstasy. "Over the surface of men's ordinary life, the power of Hashish spreads a magic glaze can spread over any form of experience. For many it exerts its greatest power in connection with music, hopes and fears, odds and ends, dreams and delusions. There is merely a shifting of moods and thoughts changed like a pattern in a kaleidoscope.

LSD

LSD (Lysergic Acid Diethylaimd), DMT (Dimethyltry Ptamine), PCP (Psilocybin Magic Mushroom). LSD belongs to Hallucinogens family of drugs. This drug is popularly known as "Angel Dust", "Cubes", "PCP" and

"Safai". LSD mescaline, peyote are other psychedelic which produce effects very similar to those of Hashish. LSD os a chemically synthessied substance discovered in 1938. During the middle and late 60's this drug became popular in western countries and the non-medical use of this drug started in 1963 in U.S.A. and U.K. LSD is a white powder mixed with other substances and can be taken by mouth in the shape of tablets, capsules or sugar cubes. LSD is supposed to make individuals more sensitive to sights and sounds and more in tune with themselves nature and other people. LSD mescaline and peyote and many other synthetic substances have the capacity to induce complex psychological worldliness, hallucination and other types of distortion. Sometimes their experience becomes crude, bizare and rightening and are called "badtrips". As in the case of other drugs many college and university students experiment with LSD with the curiosity and ability to increase sensory awareness. They are curious to experience "mind expanding trip". They also want to escape from the day to day stresses of life.

The effects of marijuana and LSD:- The effects of marijuana and LSD depend largely on the mood, motivation, situation and personality of the user. The reactions vary from person to person. Marijuana is an expensive and dangerous drug. It distorts the perception of time and space in the user. The marijuana smoker may mistake 5 minutes for 5 hours. Marijuana like alcohol, has been held the main cause of sex offences and other crimes. It releases the inhibition and deadens and judgement. The continued use of Marijuana is responsible for the personality maladjustment and antisocial behaviour. It is said that regular users of Marijuana do not develop a physical dependence upon the drug. But it is not true. After interviewing 20 students

of Punjab and Punjab University, it was observed that the users do not stop it. They became the victims of psychological dependence upon the drug. Through marijuana, they achieve the euphoria which has made them escapists from life. The users smoke marijuana in hostels, clubs and their own social groups. They chatter, giggle, become boisterous, hilarious and aggressive. The use of marijuana clouds their judgement. Like tobacco smoke, marijuana can cause bronchitis, cardiovascular problems and other respiratory disorders. Though at initial stages appetite is increased but in the long run, food intake is reduced and weight decreased. After taking LSD a person gets feeling of detachment from the world and bizarre behaviour. To him objects may seem to be reeling and merging with one another. The "bad trips" may cause depression, dizziness, and in some cases insanity (in hostile environment). The main hazards of LSD are not physical but reported that some students have committed suicide under the influence of LSD. Some addicts have experienced distortion of vision while others have had the feeling of heightened self awareness and mystical experiences. LSD high may spontaneously recur days, weeks or even months later--the phenomenon which is called "flashback". A feeling of being outside one's body has been commonly experienced by the addicts. When taken frequently both marijuana and LSD can affect the personality growth and jeopardize health, happiness and energy.

Narcotic Analgesics

Opium, Heroin, Morphine, Brown Sugar (Adulterated Heroin), Pathidine, Fortwin, Smack.

When in 1898, the whitish crystalline powder, heroin was first produced it was believed that a drug had been discovered which would reduce pain, induce sleep and cure many respiratory diseases without causing

addiction. But ironically enough, heroin proved to be the most addicting substances and more potent than its parent drug morphine. Both drugs are members of the opium family. The small doses of opium can be a boon to man having severe pain, but frequent and improper use can kill the man. Opium was known in Ancient Mesopotamia and is recorded as being widely used in ancient Greece, Peyote Tobacco, Coca, Soma all have played parts throughout history. Opium is narcotic drug prepared from the juice of the unripe seed pods of the unripe poppy. There are two varieties of opium poppy---one with black seeds and the other with white seeds. White seeds yield better oil. It is at first brownish in colour which soon changes to dark, it is bitter in taste and of an unpleasant odour. Seeds are white, grey or black, sweet in taste. Opium is grown in many parts of the world and chiefly in Turkey.

The Effects of Opium and Heroin

Opium in small doses at first stimulates the brain, heart and respirations. But this effect is followed by general depression. When a patient is injected he feels a surge of pleasure and then a state of gratification where his pain and sexual urges diminish. Generally opium is anodyne hypnotic, intoxicant and cerebral depressant. Its chief action is on the cerebro spinal system and through the nerves it acts upon all the organs of the body. It causes constipation and piles. It decreases the quantity of urine, increases heart beats and arterial tension. At first it produces exhilaration of the cerebral functions, then a mild intoxication followed by drowsiness vomiting and sound sleep and often followed by headache, indigestion, depression of heart and vertigo twitching and aching muscles. The frequent use of opiates create craving for the drug. Many individuals even after temporary withdrawal find it very

difficult to break their dependency. Without the drug they feel uneasy and sometimes abnormal. When heroin or brown sugar is used frequently. The addict develops terrible craving for other drugs. He is forced by the urge to lie, steal or borrow just to obtain the drug. As regards opiates, there are four types of drug abusers. There are those drug abusers who are physically dependent on opiates and want such drugs regularly come what may. Sometimes they use this drug in combination with alcohol which is very dangerous. Then there are therapeutic drug takers. They are elderly persons, sobre and sensitive. The persons from rural areas use opium in little quantity regularly and they have healthy life style. Then there are those opium takers who were taking opium and other drugs but have left that due to some powerful influence of some individual or collective environment.

Amphetamines

Cocaine because of its cost is regarded as "Aristocratic drug" and abused mostly in European and Americans countries. Cocaine is sometimes mixed with heroine and injected but usually it is sniffed up the nose. Its leaves are chewed. The most common method of taking cocaine in India is by putting it in "Pan" or betel leaf. Some of the addicts place the alkaloid on the dorsum of the tongue and the chew a (Pan) immediately after wards. Addicts who have been using this drug for a long time lime afterwards. Dispensing with the betel leaf. They say that by doing this the action of the drug is enhanced and the effects produced are stronger. The sexual act is said to be prolonged if the drug is administered by injecting a solution of cocaine into the vagina. Cocaine is popularly believed to be nerve stimulant and restorative. It is an antidote to alkaloid opium and tobacco habits. It is a great digestive tonic. It

has a extra ordinary effect (temporary) in over coming mental and physical fatigue. Cocainleaves which are euphoric, if chewed strengthen the gums and preserve the teeth, and during physical stress and strain they are refreshing and invigorating.

The Effects of Cocaine

The action of cocaine on the brain is very powerful, a single injection may cause serious troubles of the brain i.e., mental disorders, illusions melancholia which appear after one day and last for weeks and months. The prolonged abuse brings about graver symptoms. With regular use, the drug may affect the spinal cord and cause convulsions. It may also cause respiratory problems. The addict develops meemanour, apathy, hallucination and passionate desire for the drug. By the regular use and abuse of the drug, will power diminished capricious temper irritability, obstinacy mental weakness, insomnia, abnormal sensations under the skin suspicious bitterness towards cited forgetfulness diffuseness in writing and speech physical and intellectual instability. Consciousness is replaced by negligence. The addict becomes physical, mental and moral wreck. The addicts of amphetaminers can become accomplice of highway tragedies organised crimes and juvenile delinquency. Amphetamine users experience increased energy. A feeling of well being a rapid heart beat and breathing increased blood pressure, sweating dilated pupils. The user may become talkative, restless excited or feel powerful, superior or aggressive, chronic heavy users of amphetamines may develop amphetamine psychosis, a form of mental illness. According to the report of the International Review Panel of the Human Resources Administration, New York (Nov, 1999) "There were 46713 reports of child abuse and neglect and 103 of the children died additionally withdrawal symptoms.

Because of cocaine many babies are also born flow of blood to the placenta and reduces the supply of oxygen and nutrients that reach the foetus. Babies are also born with the dreadful AIDS virus transmitted by intravenous drug abuse and passed on from the mother to her foetus. We have just begun to see the devastation says Dr. Leonard Glass, researches warn of "an epidemic of damaged infants, some of whom may be impaired for life because their mothers used cocaine even briefly during pregnancy. Even one cocaine hit can cause lasting damage to the foetus became a by-product of the drug, nor cocaine stays in the amniotic fluid and repeatedly batters the developing child. Effects can include retarded growth, stiff limbs, irritability, tendency to stop breathing and higher risk of crib death". Says, "The Times" (Nov.1999)

Barbiturates, Sedatives and Tranquillisers

In 1903 medical scientists Fischer and Von Mering prepared a synthetic drug from urea and malonic acid which was sold in the market under the trade name veronal. It was used to induce sleep. Since 1500 different barbiturates have been prepared but less than 30 are in medical use today. The barbiturates depress the nervous system. The best known members of this family are phenobarbital, Nembutal seconal and Amytal. These drugs are used medically to relieve pain. Control convulsions and induce sleep. When used under medical supervision, the barbiturates are safe form of medication. When abused, they are most dangerous. When taken in excessive doses, they have a toxic effect on the body which may cause acute poisoning.

The Effects of Barbiturates, Sedatives and Tranquillisers

If taken excessively barbiturates may paralyse the breathing centre and prove fatal. Frequent and careless use of barbiturates may cause serious addiction. It is

due to indiscriminate use of the barbiturates that they have been removed from the public sale. The addicts who know the argot call it "golf balls" yellow jackets, "pink ladies". Some addicts use barbiturates as a cheap substitute for heroine Barbiturate sleeping pills are often misused. It was in 1950's when tranquiilisers made their first appearance in the public and were sold under the name "happy pills". They were used to relieve anxiety, pain, tension, calm fears and to minimise various forms of mental and emotional stress. More than 40 trade named brands of tranquillisers are now made but the best known are chlorpromazine reserpine and meprobamate. These drugs are complex chemicals which act upon the lower levels of the brain where the emotional controls are centred. They are commonly known as "Psychiatric drugs". Generally the tranquillisers do not lead to addiction but they are capable of producing serious side effects such as liver disturbance, abdominal disorders. There sedatives Librium, Valium and Mogadon prove very dangerous when combined with alcohol.

Some Commonly Abused Drugs

Drug	*Temporary Effects*	*Risks of abuse*
Opium Heroin	Exhilarating, Gratification, Euphoria, drowsiness Apathy, Depression Nausea, Vomiting.	Shallow breathing heart ailments, veritgo arterial, tension convulsions, Coma, death.
Barbiturates Sedative Tranquillis	Sleeplessness nervousness, slurred speech, depression delirium irritability skin,	Brain damage, respiratory, disorder bronochitis liver, gastro problem
Cocaine crack Amphetamines	Melancholia increased alertness illus-	physical and mental wreck, bizarre behav-

(Contd. ...)

Drug	*Temporary Effects*	*Risks of abuse*
	ions, diffuseness in writing and speech, mental weakness	our hallucinations, failure convulsions death.
LSD PCP	Exhilaration variety of moods, Hallucination deadens the judgements, deep depression,	Bizare and dangerous behaviour genetic damage suicidal urge, psychosis death.
Marijuana Hashish	Transcendental experiences hallucination repture relaxed in hinitions, increased hotter and faster.	Mental and physical fatigue behaviour, heart ailments, respiratory disorder.
Khat	Stimulating, relaxing indigestion constipaation, piles, mental depression	Sleeplessness loss of appetite loss of weight dyspepsia hernia liver coma death.
Hallucinogenic Mushrooms	Euhoric dreams and visions happiness, sickness vomiting	Anxiety attacks mental disturbances hallucination, death.

Modern man seeks to relieve sorrows anxieties, sufferings stresses and tension by means of pills. He tries to live in a state of Euphoric happiness and pleasure or to endure pain. The character in Aldous Huxley's famous "Brave New World" are supplied with "Soma" pills which they take for getting themselves rid of fear pain worry stress and tension. Under the influence of soma they escape from the sordid relities and fearful odds of life. This book of Huxley is of course a trenchant satire upon the tendency of modern man to seek solutions of his multidimensional and multifarious problems with pills and powders.

7

Yoga—Meaning and Relevance

Yoga has a long history. It is an integral subjective science. Its spiritual, mental or physical import cannot be separated from each other. According to Panini, the Grammarian, the word yoga is derived from two roots, viz. Yujvir and Yuja... one referring to yoking (Yujvir Yoga), and the other referring to mental concentration (Yuj Samadhi) and to sense control. Yoga standing for mental concentration is the theme of the entire Indian systems dealing with yoga. It also implies the control of senses. Thus the second derivation of the word yoga consists in Citta vrittinirodhah i.e., the silencing of (all) activities in the mind's substance.

Vyasa too, in his commentary on patanjali takes reintegration (Yoga) and identification (samadhi) as synonymous, Shri Gaddadhara, the teacher of logic (Nyaya) says: "Reintegration means identification (samadhi). It is of two kinds: conscious (samprajnata) and unconscious (asamprajnata). The union (samyoga) of some part of one's being with anything, whatever it may be of which there is a desire to know the essential nature, even though it be beyond sensory, perception its instability is called "conscious identification" (samprajnata samadhi). "Unconscious identification" (asamprajnata) is that mental union (Manah samyoga) which arises in some part of the self but which, because

of the absence of inward uplift and of perfected inward contemplation remains uncoordinated.

"Conscious identification" is the state of full cognition. This means that in this state the object of contemplation is actually witnessed and the mind is fixed upon it. This is characterised by the silencing of all thought except that of the object contemplated upon. Hence, conscious identification is the silencing of mental activity. With, as its result, the witnessing of the object of contemplation. Since it is defined as state in which nothing is cognized---all notions must be abolished in unconscious identification. In this state there remains therefore nothing of the mind except the traces left by its previous activities. If this were not so, consciousness could arise again. All intuitive perceptions come within the realm of unconscious identification. According to Vedanta, yoga means supreme realization. Yoga is the reunion of the living self with the supreme self. According to the treatises on yoga, supreme realization is considered as the aim of all yogic practices. But the means of this realization as well as all intermediary stages are also taken to be included in the term yoga. The main obstacle to realization being the consistent activity of the mind, yoga is thus defined to silence the mind leaving all mental activity is yoga. "The silencing of the mental activities which leads to the complete realization of the intrinsic nature of the supreme person is called yoga.

The word yoga can also be used as an extension for knowledge, love, action etc. Since these are also means of liberation (moksha) and are thus the instruments of reintegration (Yoga). The activities of the mind are said to be five in number. These are ascertaining of facts (pramana) false knowledge (viparyaor knowledge contrary to facts), imagination (vikalpa), sleep the experience of being unconscious and memory (smiriti).

The modes of ascertaining the real nature of things are direct experience. Deduction therefrom and the traditionally transmitted revolution. The mental activity which through sensory perception leads to exact knowledge of things as they constitute the ascertaining of facts through direct evidence.

Mental activity resulting from the generalization of categories is deduction (anumana) mental activity contrary to facts constitutes false knowledge and is the result of a defeat (either in the perception or in the object). Memory is exclusively the activity resulting from imprints left upon the mind's substance by former experiences. The mental activity of sleep is limited to the experience of happiness during sound sleep which gives rise to such memories as "I slept pleasantly".

The Mastering of Sensory Impulses

The limits of the physical body can never be transgressed without knowledge and thoroughly mastering the sensory impulses which govern the process of living. The most vital impulses delude us the most, thus safely protesting vital functions from dangerous interferences. That is why the vital instincts and rhythms can only be acted upon and mastered through a very expert technique. It is this technique which is called yoga. The adept in yoga, the yogi, like the psychiatrist goes straight to the root of the most powerful instincts, those which move forcibly hold us within the domination of matter, and he is also to control his vital functions by a thorough knowledge of the particular processes and emotive regions of mind. Here the yogi differs from the moralist for he holds that to neglect psycho factors is remaining within their grip. The network of the instincts binds the gross to the subtle body and keeps us imprisoned. The knots of this network are strong and complex, without technique for undoing

them, we can never escape from our physical envelops but are kept always on the path of the individual life is assured. Yoga keeps aloof from emotional and sentimental impulses. Yoga is not attained by him who eats too much, nor by him who abstains from food, nor by him who keeps awake. This yoga which destroys pain is achieved by him who eats and behaves as is proper, whose all actions are led by reason, whose sleep and wake are regulated.

The Methods of Yoga

Basically, all physical and mental knowledge is an experience. A conception uncorroborated by experience remains a speculation and we can never be certain of its reality. The extent of our knowledge is therefore limited by the greater or lesser extension of our perceptions. If in any way we extend the field of our perceptions, non-horizons immediately open up before our powers of knowing. In the field of sensory perceptions the microscope, the telescope the instruments sensitive to all kinds of vibrations have extended according to their power and horizons of scientific knowledge.

Indian philosophers have asserted that all knowledge is built upon experience. But they maintain that an outward perception only is not a real knowing and that the only way for us to know a thing completely outwardly and inwardly, it to identify ourselves with it, only when we are one with it, can we know it in itself and not merely as it appears to be from an external point of view. This is the intention behind yoga which refers to identification, identification with Divinity being "realisation". By its very nature sensory knowledge is limited to appearances. The ancient Indian thinkers speak of the world of appearance as the work of maya, the power of illusion, because its inner reality appears before us as if hidden by changing forms. However, deep our

knowledge of a thing may be, however near we may be to it, so long as we remain distinct from it, we cannot know it integrally.

On the eyes of a corpse an image forms like a reflection in water, but there is no faculty of consciousness to seize it, no memory to take its imprint. That which really perceives is our faculty of consciousness. It seizes upon the experience of the senses, which, were they separated from it, would be mere mirrors. The ancient Indian thought asserts that we can conceive of an Angel or subtle being, which, free from a gross envelope and not bound by its limitation, can perceive all things. Might there not be likewise for our conscious some way by which it could cross the boundary of its bodily prison, all things, of which through the intermediary of the senses, it can know only limited fragments. The realization of suprasensory perception is one of the stages of that particular training which the Indians call yoga. This training aims at the direct experience of all things through identification with them. All the Vedic scriptures are considered to have originated through this process and it is, therefore, only in yoga that their key is to be found. Yoga is the guardian of Eternal Law, Yoga is the guardian of knowledge without knowing the method of yoga, no realization is possible. However, intent on learning detached knower of the law, self restrained one may be, a God even cannot without yoga attain liberation. Yoga is thus the technique of realization. It embrances all forms of religious experience, all of which are based on yoga, knowingly and unknowingly. Every form of knowledge too is ultimately a form of yoga. Yoga is the means as well as the object of knowledge it is through yoga that yoga can be known through yoga that inclination towards yoga develops. He who through yoga becomes freed from passion delights endlessly in yoga.

The Yoga in Man

In recent times, Sri Aurobindo saw a new vision and possibility of advance in spiritual life. He realized that it should and could be possible for human race as such to rise to a new and higher status of living a supramental in place of the mental which it now commands, but which is subject to partiality, fragmentaries and division. A supramental status of wholeness, sure of truth is the development called for and needed in the present situation of human life. This, Aurobindo called "The integral Yoga", the yoga which should lift the integral process of growth to a new integral consciousness. In the right view, both of life and of yoga, all life is either consciously or subconsciously a yoga. For we mean by this term a methodized effort towards self-perfection by the expression of the potentialities latent in the being and a union of the human individual with the universal and transcendent existence we see partially expressed in appearances, is a vast yoga of nature attempting to realise her perfection in an ever-increasing expression of her potentialities and to unite herself with her own divine reality. In man, her thinker she for the first time upon this earth devises self-conscious means and willed arrangements of activity by which this great purpose may be more swiftly and puissantly attained. A given system of yoga, then can be no more than a selection or a compression, into narrower but more energetic forms of intensity of the general methods which are already being used loosely, largely, in a leisurely movement with a profuser apparent waste of material and energy but with a more complete combination by the Great Mother in her vast upward labour. The true and full object and utility of yoga can only be accomplished when the conscious yoga in man becomes, like the subconscious yoga in nature, outwardly coterminous with life itself we can once more, looking out both on the path and the

achievement say in a more perfect and luminous sense "All life is yoga".

Relevance of Yoga: Psychological and Physiological Context

We are living in an age of explosions, explorations and paradoxes. We have conquered the unconquerable and achieved things beyond the wildest dreams of our ancestors. Our cosmonauts have eclipsed icarus and our scientists have penetrated to the heart of the atom. Inventions have altered the very condition of life. Science has changed the world into a place of abudance and plenty. But on the one hand the unprecedented growth of the knowledge and privileges of man have taken place, on the other, due to ever-increasing ambitions, desires and competitions, restiveness and maddening tensions have also increased by leaps and bounds. Materialism could not full the chasm of spiritual and social dissatisfaction. Even today, the human being is as much destitute, suspicious, aggressive and restless as he was perhaps not in the primitive age. Ever-increasing disease of insomnia, mental deformity, impulses opposing ethical values and destructive instincts are some of the common physiological and psychological problems facing man.

An important reason for this growing affliction is that the present day man, due to complexity of existing culture, can neither express nor fulfil his desire in a natural way, nor can he get rid of his ever increasing ambitions. In the inner self a storm of passions and outwardly a covering of civility are such two levels which are breaking the man of his own. The simple and natural life which has been lost by the human society could not be substituted by the cultural sublimation and eradication of fundamental instincts and passions. A

deep void and perplexity full of struggle is the tragic tale of modern man. He is passing through various internal and external stresses due to which his mind is afflicted and full of anguish. The practical acquisition of yoga is the attainment of tension free citta. Yoga technique being based on wisdom oriented restraint and contentment uproots the desires and produces calmness in the mind.

According to Freud libido is the main force at the root of impulses, passions and their consequences which in a way is a desire for a spouse and its common form is a will to possess. Fatherly or motherly love, devotion for Lord, materialistic fascination, anger, envy, emulation, repulsion etc., all the feelings and impulses are expressions of this power. Hunger thirst lust etc. the fundamental instincts when growing in the form of desires gradually become hard knots and are called passions. These passions expect their own fulfillment and in this effort and their expression, but due to contrary external positions and nonacceptance by ethical ego, which does not recognize them, does not allow them to be fully expressed. Thus the struggle of these two elements generates tension. These passions and emotional currents. In want of their fulfillments and expression due to obstructions become part of the subconscious mind. There these suppressed passions do not get extinct and wait in disguise for their expressions. They express in the form of "Undesired trepidation" anxiety, daydreaming, mistakes in common behaviours and forgetfulness etc. and breed many physical ailments and mental deformities to create a further long chaotic tradition.

Yoga having analysed the human behaviours searches out this inherent catalystic element i.e., kama element in it, to which it calls attachment. The research of yoga transcends the research of psychology when the former

accepts avidya as a more subtle element, the root instigator of behaviour. This avidya is the inclination of mind to search for the self in the objects other than the self. It is that false vision which according to Patanjali and Jaina yoga is negation of the realization of the self which is eternal and free. According to Buddha yoga, this avidya insists to accept its own existence. Yoga considers this prejudice as the originator of kama or attachment which usurps other's material. Thus yoga to some extent gives concurrence to Freud and to some extent it is in disagreement with him. Yoga also searches the opposite element of avidya, i.e., viveka khyati or in other words the power of the self which is the seer. It is considered the power of atman in jaina yoga, of Purusha in Patanjali yoga and of citta in Buddha yoga, thus all these accept this power in one voice. This very power differentiates restraint from mortification.

In psychology mind analysis is that catharsis process which while bringing the unconscious knot, emotions and feelings of the mind to the conscious land, eliminates the tensions created there of previously after hypnotising the patient through instructions his suppressed unknown emotions were known but Freud invented which the patient, after having laid in the free posture sukhasana, is allowed to speak whatever comes in his mind. He is inspired to expose not only his story but also all the images and memories occurring in his mind. In this way, the suppressed desires erupt and feelings are catherised.

According to yoga system also this process of catharsis can be implemented in two ways. So long as the suppressed passions are concerned, through Savasana the unconscious samaskaras are allowed to protrude fully. Then they are made known through the powers of the mind which could further be catherised. The subtle seeds of this process of catharsis are found

in the pratyahara of Patanjali yoga, kayanupasyana and cittaupasayana practises of Bhuddistic yoga, and udirama process done through tapas and meditation in Jaina yoga.

In yoga, the purgation protruding emotions can be catherised without suppression. In the moments of their protrusion without resisting their emergence on the mental level in the light of the unprejudiced power of the seer or by enlightening through the discriminatory wisdom, they can be purgated. In this process, the cittasakti which by becoming ideational through the emotions could flow outwardly is made internal oriented. In psychology when protruding emotions are controlled or obstructed by self-imposed ethical powers are controlled or obstructed by self wisdom which transcends even ethical ego procreates restraint and thus the emotions are purgated.

In this purgatory process, other parts of yoga may also prove to be important. Since the emotions have both the physical as well as mental dimensions, the Pranayama and Asana may be helpful their catharses to some extent. The balanced body and tranquilled respiration attained through Asana and Pranayama can help cleansing the material aspect. The yoga might agree with this principle of James Lang that "the knowledge of a stimulus creates a few changes in the body and the feeling of those changes in emotion". Ordinarily we say that we have lost our wealth and we weep. We meet a bear, we are panicky and take to heals. A rival insults us, we are angry and we beat him. But according to this theory this sequence is faulty because more intellectual statement would be that because we weep we undergo anguish. We beat hence we become angry. We tremble and become afraid of. But yoga contrary to the above alluded principle of James Lang does not explain the emotions as merely

physical changes because in its (Yogic) view, the complete catharsis of emotions requires development and consciousness of cittasakti which in its supreme nature is free from attachments and detachment. The viveka khyati of patanjali yoga, vipasyana and alertness (sajagata) of Buddhist yoga and janai practices of jaina yoga, throw ample light on this fact alluded to above. It does not mean that yoga excludes the fulfillment of genuine passions because yoga accepts the fulfillment of biological needs and this fact is delineated in patanjali yoga by distinguishing between yama and mahavrata and by accepting them as the constituents of yoga. Likewise this fact is further cleared by the anuvarats spiritual repudiation of biological values but it is the establishment of spiritual values above biological values as is clear from the word adhyatma (adi + atman) itself. The practice of yoga is not based on suppression, it is that practice of attachment based on wisdom which further educates and purifies the internal dimension of human personality.

Body Context

Yoga does not educate only inner aspect of personality but it undertakes the education of outer dimensions also. Not only asans but pranayama, prayahara anddhyarna play an important role in maintaining the physical health. Through asanas, the fat body becomes flexible internal organs are massaged, blood circulation is regulated and the nerves are balanced. Through regular practice of asans the secretion of thyroid, parathyroid and indoenine, diseases like asthma, diabetes, high blood pressure, mental ailments, heart ailments and abdominal disorders can be used.

Pranayama and Health

Every part of the body is regulated by the energy supplied by mind and the arterie emerging from spinal cord. The power of the desired flow of this energy depends upon the secretion of indoarine glands and this energy is cultivated through blood made available to the glands by the nervous system. The best blood is produced by the life promoting oxygen and nutrition elements which cherish and nourish the body parts. Oxygen through inhalation and nutritional elements are received from the blood but for this all respiratory organs, digestive system and circulatory system are required to be efficient so that continuously produced carbondioxide may be purified and pure blood may remain unaffected from the poisonous gases produced by the undigested food. In Pranayama through purka racaka etc. the exercise of stomach and its muscles, liver, intestines and lungs is undertaken so that they all may become stronger. Through Pranayama the organs get attuned in such a way that a human being digests a lot more oxygen than his ordinary capacity in a day. Pranayama makes circulatory system regular and thus with the help of a pure blood circulation even the unconscious part of the mind also becomes active.

Meditation and Health

The meditation influences the thyroid gland, it normalises the oxidising power of body and helps balancing the excessive stimulation produced by the secretion of thyroid hormones. Likewise lethargy, mental inertia, produced by the clauminated. Secretion of thyroid hormones, are eliminated. As made known by "Electron safelogram" experiments, the meditation dispels away the tensions. During the process of Dhyana, the activity of the alpha waves is enhanced and a deep rest is attained. Hence one can save one self from the

badly effected respiration due to mental tension. Similarly, the energy likely to be wasted in anxiety and thinking process may be saved.

Yoga in Social Context

So long the practical system put forth by yoga is concerned, it impresses upon discarding violence and corruption which are the polluters of social life. Five vratas of Jaina yoga and Patanjali yoga, comprising ahimsa, satyam asteya, brahmacharya and aprigraha and pancasila of Buddhist yoga in which besides first four vratas, abstinence is also included, can be fully vindicated in the social context only. Violence is intentional persecution whereas ahimsa is its avoidance. Ahimsa is not the repudiation of "Otherness" but it is the sacrifice of that persecution which can be held valid in the presence of the other. Likewise truth being avoidance of deceit through gullible woods is execution of altruism through valid and secret woods. It also cannot vindicate itself without social context. Asetya in the form of avoidance if it gears oissessuin and aprigraha in the form of avoidance of others possession and aprigraha in the form of non-amassing of the riches creates a social balance from economic point of view. Out of these, the former indicates about the wrongs of consumption without producing anything and the latter declares the hoarding, exploitation and artificially created scarcity to create imbalance in the social life is improper. Thus, these principles educate us to "Produce more and accumulate less" or "Maximum production and minimum profit". This theory of yoga rectifies the shortcoming of the modern and most dominating theories of capitalism and socialism.

Maitri, Karuna, Mrduta and Upeksha which have been accepted with one voice by Jaina, Buddha and Patanjali yoga can be implemented only in the social context and

these feelings gradually soften the behaviour towards commonly hard-bit people, progressive individuals and the enemies.

Since all the three yoga traditions stress upon the elimination of attachment and desires, one question in this context may arise whether attachment is connected with social relations. Indeed neither by breaking the relations attachment is finished, nor by being attached, the relations are severed, social relations based on attachment cannot escape struggle and envy, rather they without these cannot stand of their aim because attachment cicumambulating and individual religion, community or nation, invariably gives birth to the concept of other religion, other community and other nation. This concept again in their own contexts creates schism in the name of nepotism, casteism and narrow nationalism. Though it is difficult to a certain limit, the desired social life is not possible. The detached attitude alone can produce harmonious temperament which can make social anomalies not-existent and through which sociability can spontaneously flower.

Philosophical and Metaphysical Context

Science is a study based on inspection and tests of various limited aspects of reality and philosophy is intellectual study rooted on the conceptual analysis of the reality and the truth. Dharma and its specific practical aspect yoga is an effort for spiritual relationship or visualization of that truth which is in the form of highest value or ideal. This effort is comprised of that specific realization and behaviours in which not only cognitive aspects of personality but the effective aspects are also suitably educated and through total purification of personality, the spiritual value and ideals are attained.

Yoga is not magic or feat of any kind, physical or mental. Yoga is a way of life. A mode of thinking based on sound philosophy and deep psychology. It is an educational process by which the human mind is trained to become more and more natural and wakened from the unnatural conditions of life. It is a subjective science and art. It transcends both general and abnormal psychology and helps harmonious development of mind and body. From time Immemorial, man has devised ways and means for attaining peace for nonmedical measures to have control over common diseases like hypertension. Heart ailments, diabetes and personality disorders. Man would like to mould his psychosomatic apparatus in such a way that he can face the stress and strain of modern life. Yoga is the earliest and the most effective method of providing peace and tranquility of mind. The meditation of Japan and China practised in Buddhist temples is the same as Dharna in yogic meditation. Though over all aim of yoga remains the same namely the attainment of physical, mental and spiritual health. But it is yoga in totality Yama, Niyama, Asans, Pranayama, Pratihara, Dharna, Dhyana and Samadhi (Eight limbs of yoga) which can give harmonious physical, mental and spiritual health to modern man. When one practices yogic methods one's capacity is enhanced to do more creative work. Which benefits him and society. Too much of stress and strain can cause many diseases. The number of these diseases are Increasing rapidly. There is an urgent need for taking proper measure to prevent the development of such diseases yogic practices not only help in reversing the progress of such diseases but also improve the resistance of the body at the psycho-physiological level.

8

Stress and Kundalini Yoga

In the vast realm of yoga, one of the most mystic terms often misinterpreted and misused is Kundalini. It is usually attributed to occult or psychic powers. Kundalini yoga demands Intensive discipline and constant practice. The word kundalini has a long history. The word kundalini means coiled up as a serpent coils up in sleep. Kundalini means arousing of the body's latent power coiled at the back of the spine. The methods of awakening Kundalini are complex and can be performed under the supervision of a Guru or Expert. The ancient Indian pantheon is full of varieties, forms and symbols regarding Deity as God. Some of these symbols and forms have given birth to number of theories. It is said Reality or Existence can be divided into three branches---- Creation, Preservation and Destruction. In the Hindu pantheon, these divisions are personified as Brahma, Vishnu and Shiva. The ultimate power or reality is termed as "Akasha", the eternal soul, as Atman. The substantial universe as "Prakriti". The rhythmic pulsation which constitutes life becomes "Prana" and as life manifested in the physical body it becomes Kundalini. Some yogis are inclined to think that Kundalini may be referred to as a goddess, she is the consort of prana by whom she has to be awakened after long sleep. Both eastern and western scientists have suggested that prana and kundalini can be identified as natural forces. Kundalini is like an electric

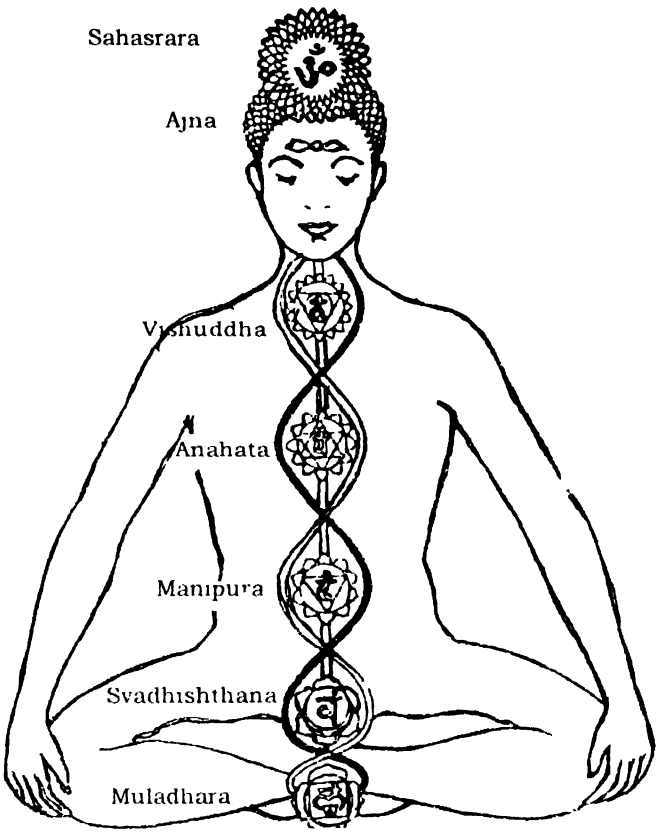


Fig. 8.1: Awakening Kundalini

force. It is a force rather than any organ. Although this force is controlled by physical by the symbol of serpent (Fig. 8.1). As the story goes in relation between Adam and Eve, serpent is the spirit of Evil. Adam and Eve represent positive and Negative poles in creation, the serpent revealed the secret of good and evil. Sin and virtue both lie in the body. In human body kundalini lies coiled up at the base of the spine. She is to be awakened to return to paradise. Kundalini stands for

that divine power which she has lost separating herself from his root, the Divine source.

The goddess is not dead, she merely lies dormant. Some yogis interpreting this hidden force regard kundalini as entirely evil. But like electricity it is neither entirely good nor entirely evil. It depends how it is applied. The kundalini is hidden like a buried treasure which is designed symbolically by circles or chakras. The seven main chakras are---- Muladhara, Svadishthana, Manipura, Anahata, Vishhudha, Ajana and Sahasrara.

Each of the chakras has its particular colour, odour, musical sound and form. The chakras are the store house of divine powers.

1. Muladhara Chakra (Root centre)
 a. Location----------Base of the spine.
 b. Form ----------Lotus with four petals.
 c. Colour ----------Yellow.
 d. Element---------- Earth.
 e. Presiding God-------Brahma.
 f. Goddess----------Dakini

2. Svadishthana Chakra (Pelvic centre)
 a. Location ----------At the genitals.
 b. Form----------Lotus with six petals.
 c. Colour ----------White.
 d. Element----------Water.
 e. Presiding God---------Vishnu.
 f. Goddess----------Rakini.

3. Manipura Chakra (Solar Plexus centre)
 a. Location ----------At the solar plexus.
 b. Form----------Lotus with ten petals.
 c. Colour ----------Red.
 d. Element----------Fire.
 e. Presiding God---------Rudra.
 f. Goddess----------Lakini.

4. Anhata Chakra (Heart centre)
 a. Location ----------At the Heart.
 b. Form----------Lotus with twelve petals.
 c. Colour ----------Blue.
 d. Element----------Air.
 e. Presiding God---------Isha.
 f. Goddess----------Kakini.

5. Vishudha Chakra (Throat centre)
 a. Location ----------At the Throat.
 b. Form----------Lotus with sixteen petals.
 c. Colour ----------White.
 d. Element----------Ether.
 e. Presiding God---------Sadashira.
 f. Goddess----------Sakini.

6. Ajna Chakra (Brow centre)
 a. Location ----------Between the eye brows.

b. Form----------Lotus with two petals.

c. Presiding Goddess---------Hakini.

d. Colour ----------snow white

7. Sahasara Chakra (crown of the Head)

a. Location ----------At the Cerebrum.

b. Form----------Lotus with a thousand petals.

c. Presiding God----------Shiva.

As the kundalini is awakened and forced upward by yoga, the hidden powers are restored to man. But the process of restoration is a very difficult task. During this process many obstacles come. The journey is vertically uphill. To become divine man has to subdue his lower nature and conquer his lower impulses. Until he rejoins his home of lost paradise. The path of kundalini suggests total surrender, complete transformation and self---abnegation on the part of the practitioner. Kundalini opens the gate of self---realization. The terms dormant and "sleeping" applied to the kundalini are relative. She acts even when she is dormant. She does not lie in a dead sleep but she dreams. The degree of her sleep and wakefulness differ from person to person depending upon the innate potentialities (Sanskaras) of the person. For undertaking this voyage self-control, restrain in speech and action, spirit of love, sacrifice and devotion and the curbing of physical passions and appetites are essential prerequisites. The body is to be considered as a divine vehicle by means of which the pilgrimage is to be undertaken. It is to be trained in certain postures, the flow of Pranayama, nerve control up and down the spine. The object of Pranayama should be to direct the prana to the base of the spine at the chakra called muladhara,

and concentrate it there. This may take a few hours or many years according to the will and practice of the learner. By mental concentration and positive aspects of the prana, kundalini is stirred and the current re-enters the spinal column called sushuma which is the gateway to sahasara the thousand petalled Lotus at the crown of the Head. This process of concentration and accumulation of energy in one chakra and then passing the same to another chakra must be done under an expert or Guru. When the dormant energy is unveiled new horizons open up and the vision becomes broader and nervous system more sensitive. According to great sage patanjali, when the seeker masters the psychic powers, he can have knowledge of the past and future, complete control of all internal organs, power to alter size of one's body, knowledge of cosmos. But sometimes while traversing the path of kundalini, the practitioner is attracted by the miracles and wonders and he forgets the spiritual goal. I know a number of persons associated with some ashrams, who hankered after tempting psychic powers and they had to see the tragic doom. A young man after practising for some years the prescribed methods of kundalini became mad. Another man, physically stout, after practising pranayama regarding kundalini chakra for six months became a nervous wreck and his story is also woeful. A young man of 29, religious and God... fearing was tempted by the allurements of the miracles and wonders of kundalini practised constantly for one year meditation and pranayama. He could not continue his practice due to certain interruptions and obstacles. One day he vomited blood profusely and became victim of Tuberculosis. Another person practised all the methods as advised by his Guru for one year, with the result he felt his body like a furnace and he become victim of consumption and after one year died. It doesn't mean that the pilgrimage of kundalini cannot be and

should not be undetaken. This advanced spiritual work should be done in a right way under the guidance of a very efficient Guru or expert. He whose heart is pure and controlled, he whose senses are under control. He who has followed the yoga ethics will find the path and he will be indifferent to the temptations of psychic powers. In yoga misfortunes befall only on those who are "Sensation hunters". To find a genuine teacher is also not an easy task. There is no dearth of Ashrama, yoga institutes and yoga instructors in India. But there are no doubt some great yoga research centres and Ashrama that are doing real service to the cause of yoga.

According to patanjali supernormal powers can be mastered by five means:-

1. By birth---- That is through heredity and parental Karma.
2. By the use of drugs--- (Indicated not as recommendation but as warning)
3. By mantras---- Science of sound and vibration
4. By devotional and religious exercises
5. Through concentration and meditation leading to samadhi the highest stage of God-consciousness.

Kundalini is the secret doctrine of Hatha Yoga and Raja Yoga. The theory of vibration is more popular today particularly the universe is now considered to be in a state of vibration. The meaning of matter has also changed. It is now interpreted as energy. An Individual is compared with a musical chord producing different vibrations representing every organ and cell. Thoughts are also results of vibrations consciousness is also regarded as the effect of vibrations.

The awakening of Kundalini from its latent condition to consciousness is also the purpose of Hatha Yoga. The various paths of yoga cannot be divided arbitrarily. So much has been written on the importance and powers of kundalini yoga and so little has been written about the correct technique of kundalini yoga. There are various methods of awakening kundalini. Whatever method one adopts one should stick to it throughout. If one wants to achieve success in kundalini yoga, one should first prepare the base and adhere to the rules of Yama, Niyama, Asans and Pranayama so that one can prepare one's body and mind for awakening kundalini. The technique of kundalini awakens:-

Sit in padamasan or siddhasan on a folded blanket at calm and quiet place. Perform pranayama exercises at least 15 times with closed eyes and mouth. Then fix your mind on the different chakras one by one from below upwards. In each chakras, you can create fine vibrations. This will naturally lead to greater blood supply, more of oxygen and tone up the organs and tissues of the region. After Muladhera fix your mind with full concentration inside the svadishtema chakra in the lower most part of the abdomen. Then concentrate on the upper part of the abdomen inside Manipura chakra. Likewise take your mind further up for concentration on the heart and lungs (Anahata chakra). Finally fix up your mind with full concentration on the crown of the Head (Sahsara chakra). This concentration on each chakra should be followed by pranayama. After sufficient practice you will experience an ever increasing feeling of well-being. The practitioner will become more sober and less irritated when he faces a stressful situation. The practitioner can achieve goal after regular practice and strict adherence to yoga ethics.

Can the functioning of the human brain be improved? This question has generated much heat. It is said that

the use of some pychotropic drugs such as amphetamines, cannabis produce certain psychological benefits. But they are quick in habit forming and cannot be used for a long time. Moreover they give temporary relief and have adverse effects on the health. Yoga is the only safe method which can improve the functioning of the brain particularly the kundalini yoga. Normally the brain does undergo some change for the better in the normal course of Evolution. In order to expedite this process of evolution one will have to quicken the pace of transformation in the psychic centre of the brain. This will also enable the brain to adapt itself to the fast changes taking place in modern time. Rohit Mehta has rightly said, "It is the preprogative of man to expedite the evolutionary process. It is within the power of man to initiate new evolutionary movement. Conscious evolution is within the power of man, and conscious evolution must imply a fundamental transformation both of the mind and brain. This is the part of the process of real yoga. In the human brain, there are two major parts, the lower or animal part, namely the hypothalamus and limbic system and the second neocortex or the cerebral cortex. Normally in an average person the animal brain is very strong with all centres of emotions, pain hunger and sex. Because of this strong basic and evolutionary fact one is always busy in keeping these lower brain centres active and we hardly get much time to Improve the functioning of the cerebral cortex, especially its psychic centre. The cortex of the upper brain is engaged mostly in Intellectual growth, but this intellectual development has no chance to survive due to pressure of instincts coming from the lower or animal brain. We cannot rule out the animal heredity, what we must be concerned about is to see that two parts work harmoniously so that animal energy is chanalised into finer channels supplied to the upper brain. To increase the brain potential, to activize the large unused areas of

the brain. This has become the urgent need of man if he is to travel successfully into the new land of yoga. One of the methods by which one can improve the working of the brain is by providing greater amount of oxygen to it. This can be done by pranayama. Another method of improving the power of the brain is to practise the relaxation posture of shavasana which also helps to regain the normal psychological powers of the brain. Thus by repeated performance of pranayama and shavasana and Jeytiskasan, it would be possible to regain the strength of the brain and also to increase its activities, to the optimum level.

Sri Aurobindo speaks of spontaneous awakening of Kundalini as against the Tantrik methods. The spontaneous method is a method by which a person by his own efforts and without depending upon the help of anybody else can awaken Kundalini. Because of this it is bound to be free from hazards and dangers. Rohit Mehta explains this simple method of awakening Kundalini as the fusion method. Thus takes place at the Sahasara chakra in the brain by joining the feminine or positively charged element in the head. When both of them fuse together there is a liberation of Biological or cosmic energy which ultimately gives additional strength to the newer areas of the brain causing newer enlightenment. In the awakening of Kundalini what takes place is the release of Biological energy. This happens because of the negative and positive poles of our Biological mechanism being induced to come together. The Muladhara chakra is where kundalini power lies coiled. If it is stimulated then the positive pole which is sahsarara will experience a union with the negative pole. It is when this happens that energy is available to the body, for the entire Biological entity.

What are the signs and symptoms in a person who has really awakened kundalini in a spontaneous manner? This has been described by Rohit Mehta in the following manner "Such a man has quick adaptability to outer challenges due to activation of wider areas of the brain. There is a maturity in such an individual, for he is no longer the creature of the heard. There is an effluence in his body vitalised as it is by the flow of new energy. He has a wider and wider contact with life and is able to move about in a variety of fields, subtle and intagible so for as life's experience are concerned. His powers of communication are greatly intensified so that he is able to communicate with others with clarity and simplicity. Such an individual has tremendous power of absorption so that his brain is ready to receive sense impacts as they arrive from all the sense organs. Thus such a man is able to live a fuller life in a universe that is much wider than what we know. If a man has to survive biologically and psychologically, the development of efficient brain and the new mind are essential. A man has to rearrange his living with the entire environment in such as way that he can live congenially and happily without any conflict with society."

9

Asanas

Asanas remove diseases,
Asanas control emotions,
Asanas give mental poise,
Asanas awaken kundalini,
Asanas give health,
Asanas reduce stress.

—Swami Sivananda

Modern young men and women are very keen to learn yogasans. They are finding in yoga a way to greater energy, better health, youthful figure and relaxed living. But they do not know that yogasana is a techniques of accuracy and precision. The word "approximate" has no place in yoga. One slight technical error may prove detrimental to the health of the practitioner. Similarly most of the learners do not know that every posture must be followed by counter posture. Moreover the learners do not know which Asan to do first and which to do last. Asans can be classified into static and dynamic. Static Asanas are performed with little or no movement, the body remains in one position for some time. The purpose of these Asans is to provide gentle massage to the internal organs of the body, glands, muscles and also to relax the nerve throughout the body. In such Asans the respiratory rate is slow and the practitioner concentrates

his mind on particular part of the body affected thereby, dynamic Asans are those Asans which require energetic movements of the body. The purpose of these Asanas is to loosen the muscles and joints and improve the circulatory and digestive systems. The study and practice of yogasanas is incompıete without pranayama. Both Asanas and pranayama are inter related. It is never too early or too late to start Asanas. Every one should look upon the care of his or her body as a sacred duty.

Asana means a posture in which one can remain steady, calm, and comfortable physically and mentally for a certain time whether seated or otherwise. There are lakhs of Asanas given by ancient Rishis and Sages. Many people wrongly consider Asanas as gymnastic exercises or body building techniques. If the gymnastic exercise constitute yogasanas then every circus clown and acrobat would call himself a "Yogi". The purpose of yogasans is integrated development of the personality i.e., physical, mental and spiritual, with the help of yogasanas, the nervous system, endocranial glands, ınternal organs as well as the muscles function properly. Asanas have physical and psychosomatic effect. They can be done by all young and old men and women. Since body is the means to duty, one should keep it healthy with one's heart by the technique of yoga.

Benefits of Asans

1. Regular practice of asans is highly beneficial for the purification of veins and nerves, and promotion of sound mind and sound body. The asanas should be learnt from a Guru or person who has thorough knowledge of the subject. The correct technique is very essential. The body is a kind of horse to take you to your destination. We remember the moral story how the soldier lost the battle, because the horse of the soldier fell, the horse fell because

his shoe fell, the shoe fell because the nail of the shoe fell. This is how for want of the care of the smaller part of our body, the whole body can be affected.

2. Yogasans help in mental, physical and spiritual development. There is no age or sex bar in doing asans. The regular practice of Asanas improves the main system namely digestive system, circulatory system, nervous system and respiratory system. The endocrine system is also controlled and regulated by Asans.

3. Asanas make the body supple and flexible and are able to adjust themselves to changes of environment. Asanas keep the physical body healthy and free from disease.

4. The regular practice of asanas increases the power of concentration, equilibrium, vigour and vitality.

5. The spinal cord is called tree of life. The branches and leaves are the ramifications of the nervous system which spreads to the near and distant parts of the body. The function of the nervous system depends upon the spinal cord. With the advancement of age, the vertebrae and joints becomes stiff or rigid particularly when no exercise is done. Yogasans keep the spinal cord supple and flexible.

6. Asanas help in the awakening of all dormant powers. The bending and the stretching of the body, the proper functioning of the abdominal muscles the purification of the blood... all give vigour and vitality to the mind and body.

7. The waste matter accumulated in our body is eliminated by yogasans. As the age of a person increases, several organs of the body are weaken

or even damaged. Asanas increase the resistance power of the body and keep it free from disease.

8. Asanas rejuvenate, tone up the different glands of the body. These healthy glands produce required secretion which help proper growth of the body, making it neither too fat nor too lean.
9. Many physical ailments and diseases namely Arthritis, abdominal disorders, diabetes, asthma, respiratory problems, migraine, hypertension can be prevented and cured by asanas.
10. Asanas help to awaken the psychic faculties. Asanas are considered as forms of meditation and psychic purification.
11. People doing mental work can increase their stamina and can have calm and clear mind by doing certain specific asans. People doing manual work can relieve their stress, tension and strains by Asanas.

Asans and Concentration

In the science of yoga, concentration occupies very important place. During each asana it is important to know where to concentrate. The mode and concentration varies from asan to asan. When a persor becomes adept in doing certain asanas minimum number of muscles is used and least amount of energy and concentration are involved. Asans practised in correct, slow and smooth manner lead automatically to concentration. Since different muscles are involved in different asans, the concentration is maintained between the mind and the movements. Finally, the practitioner should concentrate on the asans strategic points of action. Each asan produces assessed effects upon some parts of the body. For example thyroid region

is affected by Sarvangasan, and the solar plexus by Dhanurasan. The positive effect of an asan is diluted when there is lack of proper concentration at the proper part of the body. In doing certain asanas evil thoughts and diffused concentration can produce negative effects. In order to get desired effects from asans it is essential to know why, how and where to concentrate, some people turn to yogasans by chance and not by choice. This type of mental attitude cannot help in concentration which is required in every human activity.

Observance of Some Basic Rules

In order to get maximum benefits of asans it is necessary to perform them properly at the proper place and time. Asans performed wrongly or immediately after meals can do more harm than good to the practitioner. The following rules should be strictly adhered to before doing asans:-

1. Use a soft folded blanket or carpet for doing asans. Do your asans in a well-ventilated calm, clean and peaceful place. A good smooth grassy lawn or any open surrounding is preferred. Whatever be the space available, the space should be airy, free from mosquitoes, flies, ants, bugs, dirty or smoky air.
2. Before doing asans, the bladder and intestines should be empty. If you have problem of constipation, drink two or three glasses of slightly salted water then practice Tadasan, Katichakar asan, and Bhujangasan. These asans should be followed by Pawanmuktasan.
3. Except vajrasana one should not do any asan after taking meals.
4. Asans should be done after pranayama.

5. Yogasana is nonviolent activity. You should never give strain to your body while doing asans. Beginners may find their bones rigid and muscles stiff, but after regular practice they will become supple, and the body will also be flexible.
6. While doing asans, breathing should be done through nostrils keeping the mouth and eyes shut. But in simhasan, the breathing is done through mouth.
7. Asans should be done slowly and steadily with full awareness of the body. If you feel pain or strain anywhere, then immediately stop and relax in shavasan.
8. Relaxation during and after asans is very essential. Shavasan must be done last of all.
9. For doing Asanas it is better to wear minimum loose, light and comfortable clothes according to season. Ornaments, wrist watch, necklace, rings spectacles, brasiers should be removed before doing asans.
10. A yoga practitioner should pay proper attention to food which give energy, vitality and vigour. It should be sattvic food with green leafy vegetables and fruits.
11. Bathing makes the body light and fresh and increases its elasticity. Asans should be done preferably after taking a both (cold water or luke warm water) in accordance with the season. However, asans can be done in the evening also if the stomach is empty.
12. All asans should not be done at the start. Asans should be done according to one's capacity.

After doing asans correctly and regularly, you will find the difference. If your body becomes light and mind cheerful, then the asans are having positive effect on your body and mind.

A Very Important Word of Caution

1. Asans should not be done according to one's whim or liking. Each asan has a specific aim and purpose.

Persons suffering from hypertension (high or low Blood pressure) or any heart ailment or disease and migraine should not do the following asans:-

These asans can prove very dangerous for them. Sarvang asan, Halasan, Sumeru asan, Pranamasan, Makarasan, Dhanurasan, Padahastasan, Matsyasan, Shashankasan, Merudandasan, Suptvajrasan, Chakrasasn, Tolagnulasan, Sirshasan, Kapalisasn, Garudasan, Lolasan, Bhumi Pad Mastakasan, Koormasan, Pschimotasan, Vrischikasan, Kapotasan, Omkarasan, Grivasan, Kandhavasan, Mayurasan Mayuriasan.

2. People who have fractured bones and those who are suffering from fever and chronic diseases should not do dynamic asans. Moreover, no asan should be done when there is inflammation or fermentation in the intestines. Pregnant women should also avoid doing dynamic asans. They should do only advasan, and shavasan for complete relaxation of mind and body.

Warm up Exercises

Exercise No. 1. (Bicycling in air)

Lie down on your back with arms by your side and your legs together, keeping your back flat on the floor. Raise your right leg and then your left leg and rotate

them as if your are pedaling a bicycle. Making sure that your knees come up at level with your hips, ankles and thighs. Repeat it 10 to 15 times.

Exercise No. 2. (Seated Expansion)

Sit on the floor with your legs straight and arms raised. Stretch your arms as high as you can also stretch your leg forward. Try to keep your body upright. Repeat the stretching of arms upward from 10 to 15 times.

Exercise No 3. (Head Contraction)

Sit in a comfortable cross-legged position with your back straight. Line your hands behind your head and push your hands against your head and forehead. Repeat it 10 to 15 times.

After doing warm-up exercises, start following asans. These asans are highly beneficial for stress, and hypertension.

1. Siddhasana (Adept pose)



Fig 9 1: Siddhasana

Technique

Sit on the folded rugged or folded blanket on the floor, bend the left leg and pull the foot in against the groin. Now bend the right leg and bring the foot across and insert its outer edge in the crevice between the calf and thigh of the left leg. The right heel should press against the pubic bone and both the knees should firmly touch the floor. Keep the palms of the right and left hands on the right and left knees. Sit upright keeping the head and the back in a straight line. For variation, change over the legs regularly. Place the heels near the groin carefully lest the pubic bone should be hurt.

2. Simhaasana (The Lion pose)

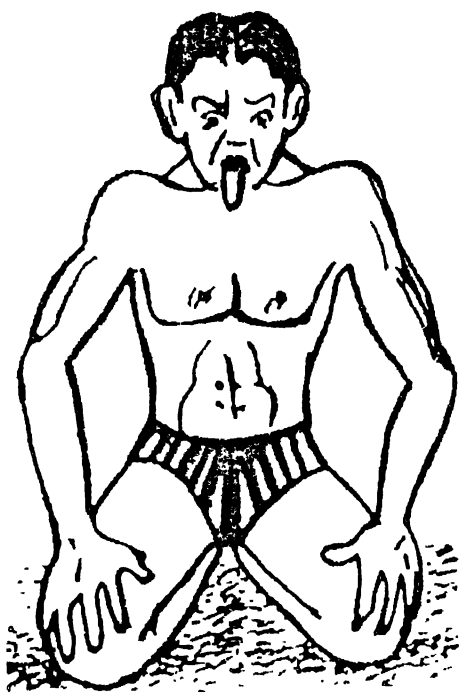


Fig. 9.2: Simhasana

Technique

Sit on the folded blanket with legs stretched straight in front. Raise the seat, bend the right knee and place the right foot under the left buttock. Similarly bend the left knee and place it under the right buttock. The left ankle should be kept under the right one. Sit on the heels with toes towards backwards and put the weight of the body on the thighs and knees. Stretch the trunk forward and keep the back erect. Place the right and left palms on the right and left knees. Stretch the arms straight and keep them rigid. Then spread the fingers and press them against the knees. Open the mouth and eyes wide and protrude the tongue out and down as far as you can. Gaze at the centre of the eye brow or at the tip of the nose Remain in this pose for a couple of seconds. Breathe through the mouth.

3. Padamasana (The Lotus pose)



Fig. 9.3: Padamasana

Technique

Sit on the folded blanket with your legs outstretched. Bend each leg and place each foot on the opposite thigh, soles turned upwards. Pull the foot as high as you can. Keep the palms of the right and left hand on the right and left knees, touching the thumb with tips of index fingers and gaze at the tip of the nose. Keep the head, neck and spinal column straight and erect and breathe slowly.

4. Yog Mudra

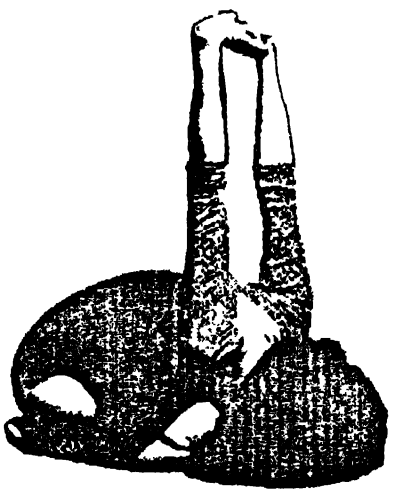


Fig. 9.4: Yoga-Mudra

Technique

Sit on folded blanket in Sidhasana pose. Relax the whole body and close the eyes. Place the hand behind the back catching hold of the left wrist in the right hand and keeping the spinal column erect, inhale and exhale slowly leaning forward touching the floor with forehead. Stay in this posture for as long as you can without any stress or strain. Focus your attention on the abdominal

region. Then breathe in slowly and rhythmically. Sit upright and relax.

5. Garudaasana



Fig. 9.5: Garudasana

Technique

On a folded blanket stand upright. Bend the left knee slightly and twist the right leg over the left leg so that the right in step is touched behind the left calf. The arms should remain crossed in front of the chest so that the left elbow rests on the right biceps against the elbow joint and the left fist is kept above the right twist in front of the face. Remain in this pose for 20 seconds and breathe slowly. Then repeat the post balancing of the right leg and reversing the arms and the leg position. Gaze at a visible white spot or point. Come to the original position and relax.

6. Ushtraasana (The Camel Pose)



Fig. 9.6: Ushtraasana

Technique

Sit in Vajrasana pose with your feet and knees slightly apart. Stand on your keens and stretch the arms to the sides. Lean backward and put the hands on the keels. Stretch the neck backward and let the weight of the body rest on arms. Bend back as far as possible and push strongly. Remain in this pose for a couple of seconds and breathe slowly without any strain.

7. Gomukh Asana (Face of a Cow Pose)

Technique

Sit on a folded blanket on the heels, knees together and head, and spine straight. Bend the right arms raise the elbow and lower the hand as far down the middle of the back without disturbing the upright posture. Bend the left arms and bring the left hand up the centre of the



Fig. 9.7: Gomukh Asana

back until the finger of both hands interlock. Breathe deeply, remain in the pose for a couple of minutes Unlock the hands and repeat the process in reverse manner. Return to the original position and relax.

8. Vriksha Asans (The Tree pose)



Fig. 9.8: Vriksha Asana

Technique

Stand up right. Fix the right leg on the ankle. Fix the right foot on the left thigh. Bring the palms of the hands together a little above the head with the arms half bent. It will assist good balance to fix the gaze on a point level with the eyes on the wall. Breathe freely and deeply. Stay in this pose at least for ten seconds.

9. Dhanurasana

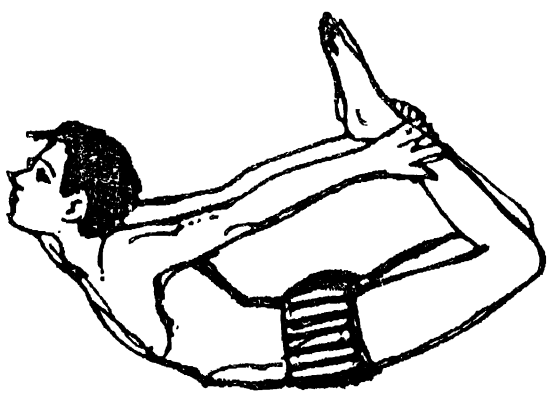


Fig. 9 9: Dhanurasana

Technique

Lie flat on the stomach and chest fix the legs bringing the feet back towards the head. Raise the legs, head and upper part of the body. While arching the back, take hold of your right ankle with your right hand and left ankle with left hand. Breathe slowly and normally. Remain in this pose for a couple of seconds. Return to the original position and relax.

10. Mayurasana

Technique

On a folded blanket kneel down. Join the two arms together and rest the hand on the floor, palms down with

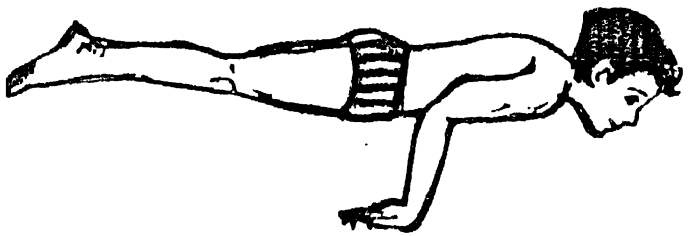


Fig. 9.10: Mayurasana

fingers pointing towards the toes. Keep the hands firm. Bring down the abdomen slowly against the joined elbows support your body on your elbows. Then stretch your legs. Inhale and raise the legs together from the floor. Remain in this pose for a couple of seconds. Exhale while raising the body of the floor and inhale while lowering the body.

11. Jeytiskasana

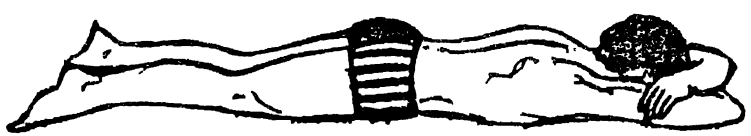


Fig. 9.11: Jeytiskaasana

Technique

Spread a blanket on the floor and adopt the pose of Advasana. Interlock the fingers and place the palms at the back of the head. Breathe slowly, deeply and rhythmically. Relax the whole body.

12. Naukasan

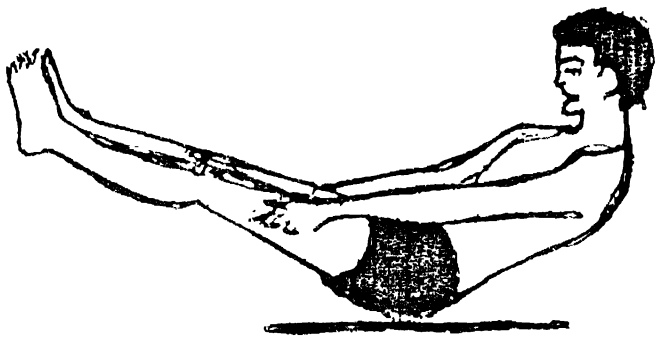


Fig. 9.12: Naukasana

Technique

Lie flat on the floor facing the sky with hands clasped at the back. Raise your feet, head on the chest up as to form a curve on the floor. With your body rest on abdomen. In this pose the body looks like a boat. Breathe slowly and rhythmically Remain in this pose for couple of minutes, and rock the body from one side to another like a boat.

13. Sarvangasan

Technique

Spread a blanket on the floor and lie flat on your back. Then slowly raise the legs up lifting the trunk and hips vertically. The hips be supported by both hands. Let the elbows rest on the floor. The chin should be firmly pressed against the chest. In this pose the hinder part of the neck should touch the floor and trunk and legs should remain straight. Remain in this pose for a few minutes and breathe slowly and deeply and concentrate

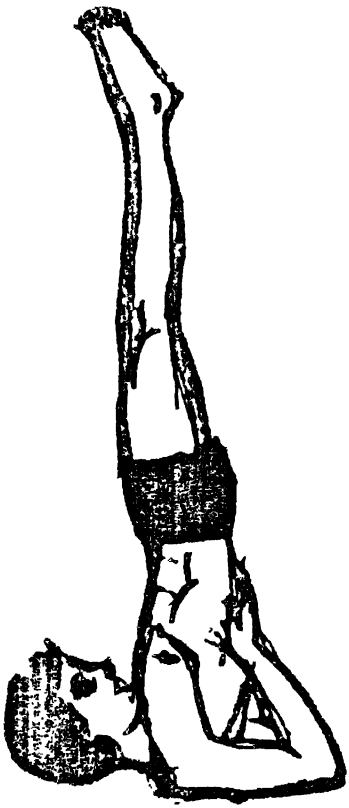


Fig 9.13 Sarvangasana

on the thyroid gland which is at the root of the neck. Return to the original position very slowly and relax.

14. Utthita Padamasana

Technique

On a folded blanket, sit in padamasan and place palms of both the hands by the sides. Now raise the body up on the hands by applying pressure on the shoulders. Keep the eyes open and look straight. When the body is

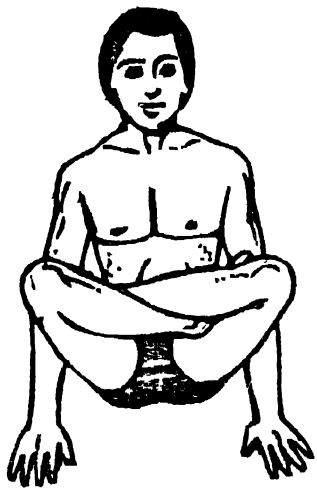


Fig. 9.14: Utthita Padmasana

sufficiently raised inhale breath slowly and retain the body on the floor for a few seconds. Then slowly lower the body on the floor and exhale breath.

15. Bhujangasana

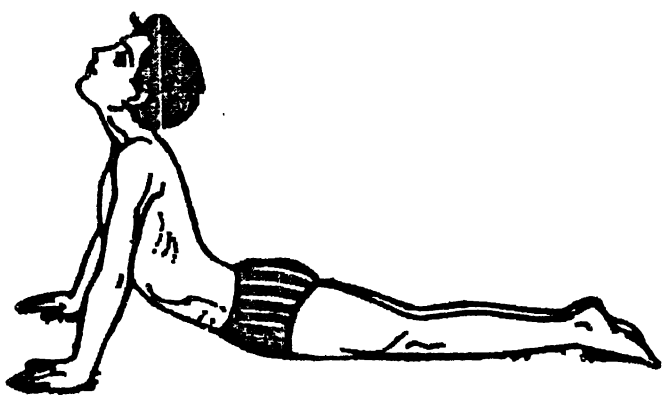


Fig. 9.15: Bhujangasana

Technique

Lie flat on the stomach with legs straight and the feet extended. Place the hands, palms down under the shoulders. Slowly raise the body the navel until the arms are straight but the stomach and the legs must touch the floor. Bend the head back gazing diagonally upwards. Remain in this pose for a couple of seconds. Breathe slowly and normally throughout.

16. Paschimottanasana

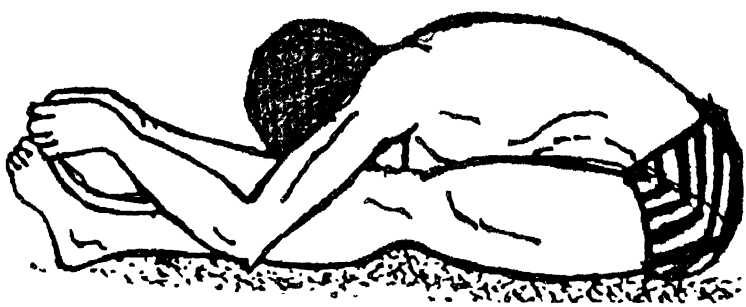


Fig. 9.16: Paschimottanasana

Technique

Lie flat on the blanket and stretch the arms over the head and breathe in slowly and normally. Raise the arms, head and trunk, exhale and bend them over the legs without raising the knees. Catch hold of the toes with fingers, contracting the abdomen and gently pressing the head against the knees Pull the toe with the arms and lower the elbows. The bending should be done very slowly. Remain in this pose for a couple of seconds and increase the time gradually. Return to the original position and relax.

17. Shavasana

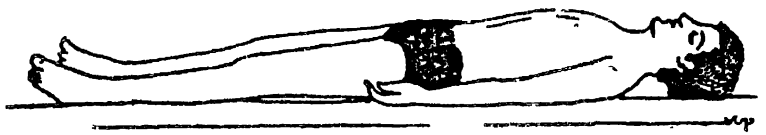


Fig. 9 17: Shavasana

Technique

On a soft carpet or blanket or folded rug lie full length on back with arms away from the body with palms facing upward and feet slightly apart. Simply lying on the floor. The technique of this asana must be followed carefully. Rhythmic and deep breathing are absolutely necessary for concentration which gives complete relaxation. Savasan has been discussed in detail in "Yogic Relaxation".

10

Stress and Pranayama

"When the Prana is irregular,

the mind is also unsteady,

but when the Prana is still so is the mind,

and the Yogi lives long,

So one should restrain the Prana".

—Hatha Yoga Pradipika

Mind is like a tree and breath is like the wind. When we see the motion of the tree, we know that the air is disturbed. It is the same with thought. When the prana is disturbed or unsteady, our mind is so disturbed that we cannot sit quietly in one place. When prana is regulated, breath also becomes rhythmic. We can watch the physical breath to learn how the prana moves. From watching the leaves on the tree, we know whether the wind is from the north or from the south,, whether its speed is slow or stormy. Similarly, by watching the physical breath, we can tell a person's mental condition. When we do pranayama we are regulating the impulse coming to the diaphragm in a proportional way. Impulses are always going from the brain to the rest of the body, we cannot see the impulse but we can see the motion. The muscle is controlled by the mind which sends the Impulses through the nervous system to the muscles. It all depends upon thought as it is thought which controls

the impulses. By using the physical breath we are regulating the impulse of prana and of apana as well. Then with the contraction of Mula Bandha, we are trying to stop the impulse from going to the sexual and lower organs, we are bringing the energy up.

According to Gheranda Yogi, four things are necessary before one can practice pranayama (breath control): right place. Right time, right diet and purification of nerves (nadisudhi). The word nadi stands for both physical as well as psychic channels inside the body.

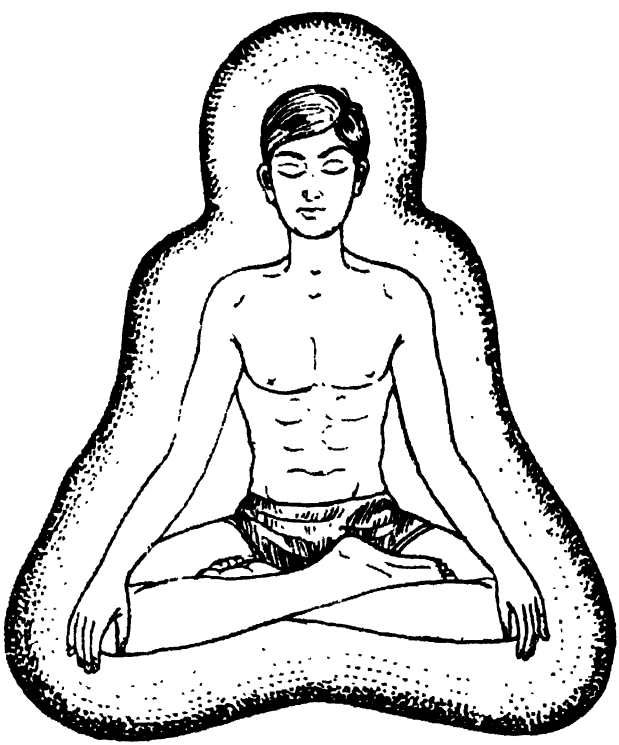


Fig. 10.1: Prāṇayama Kośa

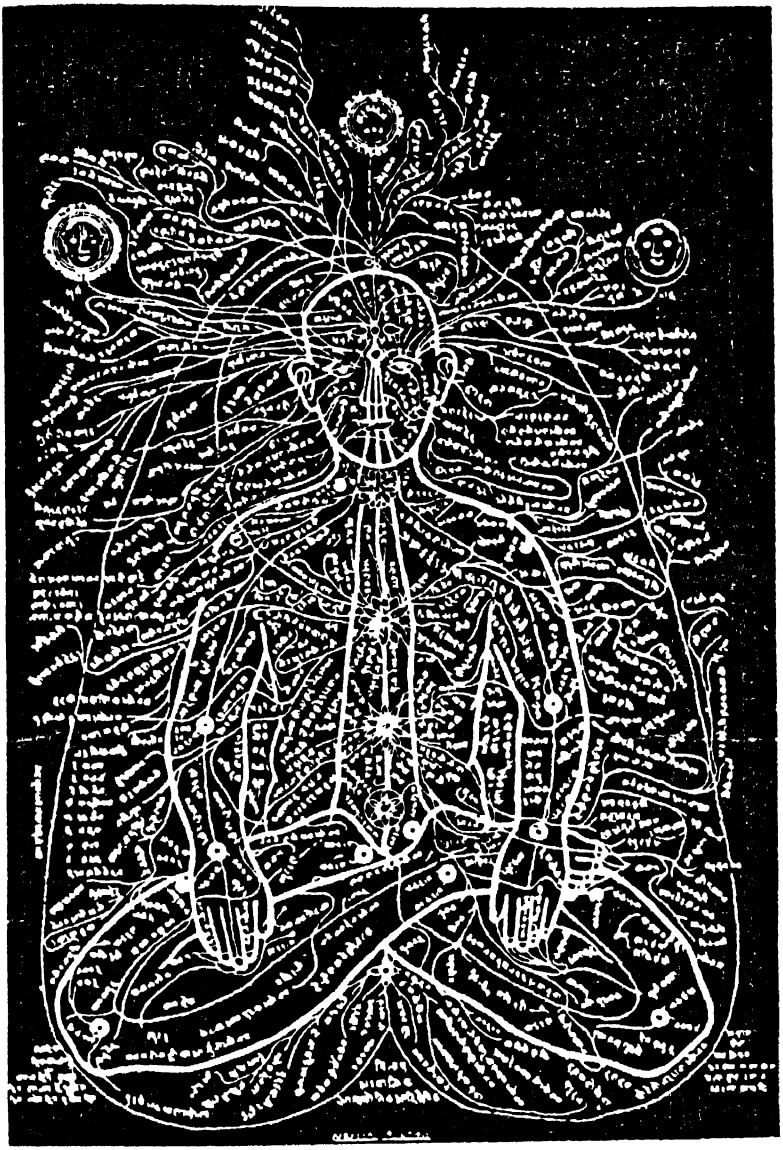


Fig. 10.2: Pranayama Vibrations

Pranayama, if performed rightly can be a means of greater bodily vitality and can exert a beneficial influence over the emotions of the mind. Prana is the



Fig. 10.3: Keep Your Nose Clean

fundamental energy, thick or thin, big or small which is present in the universe. All physical and mental forces of powers are the result of prana. Whatever moves or works or has life is the manifestation of prana. Life from

the tiny flowers to the colossal tree, from creatures and animals to human being. Prana is that energy which is the basis of all life. Where there is life, physical, intellectual, mental, psychic, spiritual higher life or lower life.... There is prana. Prana is pervading all forms of matter, yet it is not matter. It is in the air but it is not air. It is the spirit of life. Prana can reach which is beyond the reach of air prana is related to mind and through mind to will and through will to individual and then to the supreme being. If one knows how to control the waves of prana working through the mind, then the secret of universal prana will become easy for him. The working of prana is seen in the systolic and diastolic action of exhalation, inhalation and retention during the course of breathing, in the digestion of food, bile saliva, in closing and opening of the eyelids in walking, playing, talking thinking and feeling. Prana is the link between the astral and physical body. The prana in the air performs a number of functions in the human body. Each of these has a specific name and aim:-

1. Frana:- It circulates in the area around the heart and controls breathing.

2. Apana:- It circulates in the lower regions of the abdomen and controls excretory function (urine and faeces).

3. Udana:- It remains in the theoretic cage and controls the absorption of air and food.

4. Vyana:- It is spread throughout the body and distributes the energy from food and breath.

5. Naga:- It relieves abdominal pressure by provoking excretion.

6. Kurma:- It controls the eyelids to prevent foreign bodies from entering and dazzling light from harming the eyes.

7. Krakara:- It prevents certain substances from rising into the nasal cavities or descending into the throat causing sneezing and coughing.

8. Deva Dutta:- It ensures the absorption of extra oxygen into a tired body and causes yawning.

9. Dhananjaya:- It remains in the body even after death and sometimes causes the corpse to swell.

Pranayama can be divided into two classes i.e., lower and higher, the former being meant for physical and mental health and the other for high spiritual attainments. Breathing i.e., high breathing middle way breathing and low breathing. In high breathing, the upper part of the chest, the lungs and the lower part of the lungs are moved. In this kind of breathing, the minimum amount of air enters the lungs with the maximum of effort. The middle way breathing is better than high breathing, normally people in normal health breathe in this way. In this kind of breathing, the movements of the diaphragm play a very important part of air rushes in to fill the lower and middle parts of the lungs. But during the practice of pranayama all the three kind of breathing are involved. At each inspiration, the maximum quantity of oxygen is drawn in. It is then made available to be absorbed by the system during the time of retention, while during the time of expiration, carbon dioxide is removed fully from the lungs. So Purka (inspiration), Kumbhka (retention), and rachka (expiration) play very significant role in pranayama. Pranayama is a scientific mental and physical exercise. One who practise pranayama regularly and punctually enjoys good appetite, vitality, glowing face, sparkling eyes sharp memory and concentration of mind. If one does the Asans, Mudras and Pranayama regularly one is sure to find that they act as curatives and preventives for various kinds of mental and physical ailments.

Following rules must be adhered to before doing pranayams.

1. The place:- The place selected for doing pranayama should be lonely, neat, calm and clean free from noise, flies, mosquitoes, insects and other disturbing factors. If the place of practice is a room, it should be airy and well ventilated. During the hours of pranayama no incense should burn.

2. Food:- Avoid unclean, unbalanced, and improperly cooked food. One should take food that is simple, nutritious, easily digested and easily obtained. Avoid taking too much of sour, sweet and pungent things. The Food should be yogic that is sattvic vegetarian diet with green vegetables, curds and fruits. (Anti-stress diet has been discussed in a separate chapter.)

3. Moderate Sexual life:- Married people must lead a well-regulated sexual life is necessary. Sexual energy is the greatest power of the body and the mind. Instead of wasting this power it should be checked and controlled and converted into great mental energy called "Ojas shakti". Most of the maladies, diseases, miseries are due to reckless sexual enjoyment

4. The practice of asans and pranayama must be regular and systematic. Those who can find time can practice twice a day otherwise in the morning.

5. The mouth, nose, teeth, throat and nostrils should be well cleaned before doing pranayama exercises.

6. Pranayama exercise should be done with peaceful mind without worries, anxieties, anger and unholy thoughts.

7. In practising pranayama body should not shake. It is very injurious and after doing pranayama exercises, rest at least for 15 minutes must be taken in Shavasan.

8. Tight clothes should not be worn.

9. Women should not do pranayama exercise five days during menses or in sickness or in any female disorder.

10. The period of retention of breath should be increased gradually. Long retention of breath makes the lungs work to their maximum capacity persons suffering from tension and stress are required to do following Pranayama, Mudra and Banda exercises.

1. Sukh Purvak Pranayama

This type of pranayama contains most of the benefits of pranayama. It equalises the intensity of the flow of air of the two nostrils. It is extremely beneficial to the people suffering from cough, cold respiratory ailments and skin diseases.

Technique

Sit in sukhasan or padmasan and close the right nostril with right thumb and Inhale through the left nostril. Inhale as slowly and naturally as you can. Fill your lungs with air. Now close the left nostril with the ring finger of the right hand and retain breath for a couple of seconds and exhale slowly through the right nostril. As soon as the exhalation is complete, inhale full and then close off the right nostril with the right thumb and exhale through the left nostril. After inhalation the breath should be retained for a coupe of seconds. Repeat this ten times.

2. Samveta Pranayama

This pranayama is practised as a warming up exercise performed for cleansing breath. It purifies the entire system and fills the body with energy and vitality. It also helps relaxation of mind and body.

Technique

Sit in sukhasan or padamasana or vajrasan. Inhale air with both the nostrils simultaneously. Hold the breath for a few seconds and then exhale with both the nostrils. Both inhalation and exhalation should be done slowly and comfortably without any jerk or stress. This process should be repeated 10 times and the period of retention of breath should be increased gradually.

3. Sahita Pranayama

This exercise should be done after sukh purvak and samveta pranayama. These three exercise are the basic exercises for advanced pranayama. These tone up the system and prepare the practitioner for higher practices. Sahita Pranayama is an elementary exercise for harnessing the wondering mind. This exercise has great effect on Psychic nerve channels.

Technique

Sit in any comfortable asan and inhale air with both the nostrils as in samveta pranayama and retain breath as long as you feel comfortable by closing both the nostrils with the thumb and ring finger of the right hand. Then release the breath slowly with both the nostrils. Repeat it 10 times and relax for a couple of minutes.

4. Ujjayi Pranayama

Ujjayi pranayama creates heat in the body. So it is more beneficial in cold season. It is more beneficial to persons who are very sensitive to cough, cold, influenza, bronchitis. It also reduces blood pressure. It keeps the muscles of the throat healthy and induces relaxation very quickly.

Technique

Sit in padamasana or siddhasana, close the eyes and the mouth. Inhale through both the nostrils. Retain the breath as long as you can without any force, jerk, stress or strain and exhale through the left nostril by closing the right nostril with your right thumb. Expand the chest when you inhale. During the inhalation close your glottis. Then exhale slowly through both the nostrils. Repeat it 10 times and relax for a couple of minutes.

5. Bhastrika Pranayama

Bhastrika is also a powerful pranayama exercise and should be practiced under the supervision of a teacher. In this exercise lungs get maximum exercise. The entire respiratory system is invigorated vitalised and purified. This exercise should not be practised by those who are suffering from some heart or lung ailments. With Bhastrika pranayama, heat is produced in the body and great amount of carbon dioxide is exhalted. This exercise helps in decreasing tension, and stress and fatigue.

Technique

Sit in any comfortable asan. Close the mouth and the eyes. Close the right nostril with the right thumb and inhale and exhale through the left nostril known as Ida or chandra nadi or the moon nerve with great emphasis. The whole process resembles the movement of a below of a blacksmith. The head or shoulder should not be moved due to fast inhalation and exhalation. Repeat it 10 times and relax for a couple of minutes. The same process should be done with the right nostril. Keeping the left nostril closed with the ring finger followed by inside retention of breath for 20 seconds.

6. Sheetali Pranayama

The word "Sheetali" implies cooling. By doing this pranayama exercise cooling effect is experienced throughout the body. Sheetali is a good blood purifier and antistress exercise. It also controlled high blood pressure.

Technique

Sit in any comfortable Asana and protrude the tongue out of the mouth and curl it up like a tube. Inhale slowly through the mouth and through the tube of the tongue. Retain breath for a couple of seconds. Exhale through both nostrils. Repeat it 10 times and relax for a couple of minutes.

7. Sheetkari Pranayama

Sheetkari has the same benefits as sheetali Pranayama. This pranayama exercise enhances the beauty of practitioner and increases the vigour and vitality. It also removes indolence, fatigue, stress, and tension.

Technique

Sit in padamasana or siddhasana and fix your jaws and the teeth firmly clenching over each other. Open the lips but do not open the mouth. Inhale quickly by sucking air into the mouth through teeth in a hissing manner. The teeth and tongue should not move. After complete inhalation exhale through the nose. Do not retain the breath repeat it 10 times and relax for a couple of minutes.

8. Bhramari Pranayama

In Sanskrit "Bharamari" means humming of the bees. In this exercise humming sound is produced. This

pranayama is highly beneficial for nerves. It induces relaxation and gives relief in high blood pressure caused by stress or strain or tension.

Technique

Sit in Padamasana or siddhasana and inhale deeply through the nostrils. Plug the ears with the forefingers. Exhale through both the nostrils producing a humming sound. In this pranayama exhalation should be of longer duration with unbroken humming sound.

9. Kewali Pranayama

This pranayama is for the general toning up of the body. It is extremely useful for concentration and relaxation. It also removes stress and strain, physical and mental fatigue.

Technique

Sit in any comfortable asan, and inhale and exhale very slowly through both the nostrils repeating the word "HAM" during exhalation and "SO" during inhalation in your mind. Breathing should be natural and slow. Repeat it 10 times and relax for a couple of minutes.

Dr. N.K. Udupa a medical scientist has researched on stress and its cure with the treatment of yoga. In his findings he has mentioned that "there occurred a generalize reduction in all the biochemical parameters except in the urinary - Hydroxy-corticoid which was found increased after pranayama. Otherwise, serum cholinesterases, plasma catecholamines, serum lipids, serum cholesterol and blood sugar were all found reduced at the end of six months of regular practices of pranayama". This indicates that pranayama produces a good effect on all the organs and tissues and helps in maintaining their activity at the optimum level.

11

Yoga Meditation

"The problem we face is how to enter within the castle of the body. There are many souls who merely prowl around the castle, but never enter it. They do not know what treasures are inside the castle or how many beautiful rooms it has. You must have heard that the way within is to invert. But how to do it is the question. The door to enter the castle is that of meditation with concentration".

———St. Teresa of Avila

Man is a curious social animal. It has been his curiosity since his birth to know the natural, supernatural and supernormal. Behind the superficial knowledge of things with names and forms there lies within everyone a deep rooted craving for the knowledge of things unknown. This quest for the knowledge of the self is both universal and eternal. The entire history of mankind especially the efforts at civilization and culture are nothing else but mere approaches to the proper understanding of this great factor —The man—.

The true man (purusha) within the man. Meditation is an aid in reaching the lofty goal of self-realization through yoga. It is an established fact that a healthy state of mind has importance. If success is to be achieved anything above the normal. Modern scientific findings confirm how even the less distressing emotions cannot fail to leave behind a trail of ill effects. In fact no success



Fig. 11.1: Sukhāsana



Fig. 11.2: Padmāsana

can be achieved in the practice of yoga before removing the torpidity of the mind. The importance and usefulness of a code of ethics in our daily life is unquestionable. One cannot begin yoga with all sorts of physical, mental and moral impurities. According to Patanajali there are five restrains (Yama).

They are:- Non-violence (Ahimsa), Truthfulness (Satya), Non-stealing (Asteya), discipline of sex life (Brahmacharya) and Non-covetousness (Aprigraha). These universal social virtues demand great degree of self-control throughout life and are important for the purification of mind. Any negativeinvolvement with others can disturb our mental level. For example, if we cause pain to others, reactions are sure to come back to us. In the process of practising Non-violence (Ahimsa), there is every likelihood of our mind being confronted with perverse thoughts. The yoga authorities explain that the object of other virtues is to render this Ahimsa itself power by turning away from evil committed on account of forgetfulness, playfulness or necessities having their origin in the injury to others. Injury may be of three kinds:-

1. Krta or caused by oneself,
2. Karita or caused through others,
3. Anumodita or approved.

Each of these injuries can be prompted by:-

1. Greed, born of temptation or lobha
2. Anger born of ungratefulness or krodha
3. Delusion, born of misconceived notions of pleasure and sense of duty or moha.

The intensity of injury varies in intensity. It can be mild, moderate or intense. Ahimsa consists in not causing pain to any living being by word, thought or

deed. If we honestly take stock of our lives, we will discover that we spend the time in finding fault with others. It is same sad story from day to day. If we are at home, we criticise our neighbors and relatives or speak ill of this person or that. If we are at work, we discuss our boss or colleagues. Most of our time is spent in such things. We forget the wise sayings — "Great minds discuss Ideas".

Mediocre mind discuss event. Small minds discuss people. From morning to night we are complaining about or finding fault with others. But we never see or think of the flaws and failing that are within ourselves. In reality it is not others who are diseased by having a fault finding eye. Baba Farid has rightly said:-

Farid if you are wise

Then speak not ill of others

Look within yourself

And you will find all evil there

The adherence to Ahimsa creates an atmosphere of peace and harmony which brings steadiness of the mind, essential on the path of meditation. Among the universal vows imposed by yoga the next in importance to Ahimsa in Truth (satya). The upanishads reveal for the first time in the history of Indian thought an earnest enquiry after truth in all its aspects. Thus amidst all the diversities of cosmic change, they sought to find out the final truth which is unchangeable. Some advocates of this virtue claimed for truth a place even higher than Ahimsa. They say there is nothing higher than Truth. "Truthfulness consists in word and thought being in accordance with facts". Now as to the nature of facts both the speech and mind should correspond to what has been seen, heard and inferred. Otherwise how can it be Truth? Deceptive

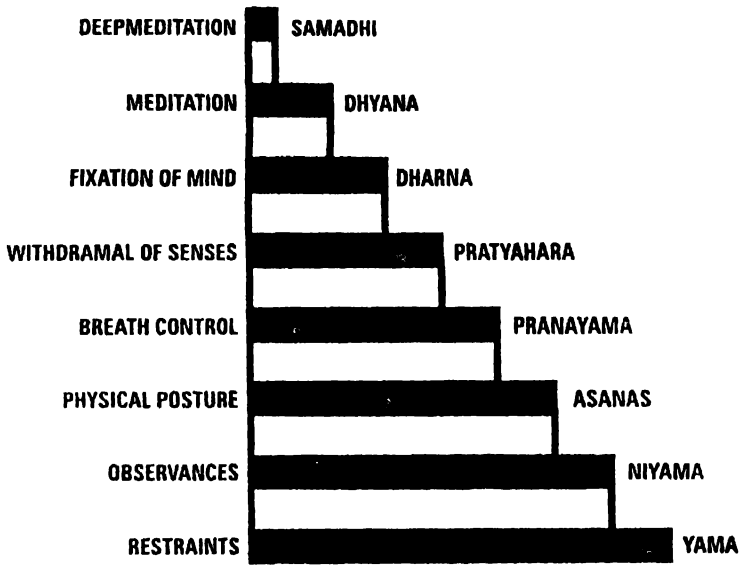


Fig. 11.3: Eight-Limbs of Yoga

speech and knowledge are born of selfishness or ignorance even though the words uttered as true, the thought is dissimilar. The truth should be employed solely for the good of others and not for their injury. If it proves injurious to living beings even though uttered as truth. It is not truth. Take for example the case of a man who has taken the vow of truth being asked by a terrorist if the man he is in pursuit of was hiding himself in his house. Of course he has given shelter to a man in his house he says so. But his utterance, even though it conveys truth is not so in reality when measured by the yoga ethics as it tends injury on the man who has sought shelter. Vyas regards such injurious utterance as not only not-truth but even as sin. Non-stealing (aseteya) is the virtue of abstaining from stealing. Acquisitiveness is a common weakness of man. Usually the more he has the more he desire.

The sexual sense and organs touches the very foundations of biological moral and psychic life of man. It has been maintained by yogis that psychic evolution is not possible except through purity of sex. Sexual problems get translated in many cases into mental problems. The physiological significance of the sex instinct and sex hygiene is evident by our everyday observations. The psychoanalysts say that the sexual impulses and energies become directed to more useful and nonsexual purposes through a process of sublimation. If the sexual impulses and energies remain unsublimated or unexpunged, they become manifested through various psychosexual perversions. Yoga recommends the purification of sexual impulses by the efforts of concentration and elevated moral and spiritual life. While yamas lay emphasis on desisting from certain things but Niyamas are concerned more with person himself and less with the society.

There are five observances (Niyamas)

1. Purity (Sauca)
2. Contenment (Santosa)
3. Fortitude (Tapa)
4. Study of the self (Swadyaya)
5. Resignation to the will of the Absolute.

Sauca (purity) implies cleanliness of both the mind and body. Cleanliness of the mind is brought about by the removal of greed, pride, ego vanity, jealousy, lust, anger etc. "Yog sutra" reveals that "By external cleanliness ensues disinclination of one's body and cessation of contact with others. By internal cleanliness Citta becomes pure and one acquires one-pointedness control of the senses and fitness for the knowledge of the self".

Santosa (Contenment) is the absence of desire to possess more than is necessary for the preservation of one's life. Another principle of yoga ethics is svadhyaya (knowledge about self). According to this discipline one must find the true nature of the self through constant enquiry and deep peretrative self-study. This introversion helps one to augment and foster positive tendencies in him which eventually give him feeling of peace and tranquility.

Another virtue in yoga ethics is Tapa (Fortitude) which implies the strength of remaining unaffected by pain and pleasure, hunger and thirst. Tapa (Fortitude) is considered will power. Another important aspect of yoga discipline is Isvarapranidna which implies complete surrender to God. We are to refrain from the fruits of all actions. While doing our duty we should not think of consequences or the fruits. This yoga of resignation to the will of the Absolute is the first stage of sublimation. Thus is clear that by following the basic ethical norms, yama and niyama the mind of the practitioner is ready for meditation which helps in stilling the mind.

So many obstacles and impediments come in the way of meditation. In spite of the sincerity to fulfil the great vows of yama and niyama the practitioner may feel troubled by evil thoughts is not enough in destroying immoral tendencies but will power is needed to uproot evil thoughts from the mind. Yoga also holds that our conscious plane is closely related to the subconscious plane. That we are apt to indulge in bad thoughts and evil emotions is largely due to a precious habit of indulging in them consciously by which such modifications took place in the subconscious plane, and these thoughts and evil emotions can recur over and over again.

The aim of yoga is to uproot the bad thoughts and evil tendencies by the acceptance of the laws of Yama and Niyama. Every practitioner of yoga is to undergo the purification of the mind through emotional control. During the early stage of emotional conflicts, contemplation on the opposites is recommended and the same should be practised daily. This practice gradually becomes a habit and is the best remedy of rooting out evil effects and immoral tendencies which are impediments in the path of meditation.

Yoga also holds that Non-knowledge (Avidya) is the cause of many afflictions. Vyasa says that before undertaking any action a person would analyse whether he is prepared to do that particular action himself or he is making someone else to do it. Patanjali in his "Yog sutra" defines yoga as "Citta Vridhinirodha" the restrain of mental modifications. The restraint is not only necessary for the attainment of self-realisation but is equally desirable for any object in life. According to Patanjali "The settled state of mind is accompanied by mental activity and after repeated experience of settling and easing of mental activity comes deeper state of meditation. This deeper state of meditation is preceded by Trust, perseverance recollection, tranquility and wisdom". In meditation there are various techniques which differ from person to person — what works for one person may not be right for another. Some people respond best to visual imagery, some to sound, and others to sense of touch. When the mind will turn inwards, the obstacles which stand in the way of progress will disappear. Patanjali says following are the nine destructors which bear resemblance to the adverse effects of stress or imbalance. The nine destructors are Illness, Fatigue, Doubt, Carelessness, Laziness, Attachment, Delusion, Failure, to achieve the deeper state of meditation, Failure to maintain deeper state of

meditation. Patanjali says that this "Slippery slope" can be avoided and these nine distractors eliminated through the techniques of meditation. Among the means of control advocated by Patanjali yoga may be mentioned.

1. Constant exercise or Abhyasa
2. Non-attachment or vairagya.

Both these means are interdependent, or two sides of a coin. Constant exercise cannot achieve anything. If there is the seed of desire and the seed of desire can be removed by cultivating the habit of non-attachment. Anitya Bhavna is recommended for the cultivation of mental detachment to all beings. This type of Bhavna suggests that the practitioner of meditation should seriously think over the truth that our body which is the cause of all kinds of human effort is transitory. All objects of pleasure are transitory. Wealth is transitory, youth is transitory so why should we be attached to anything.

Closing of eyes, sitting in padamasana and chanting, Mantras is not meditation. For successful meditation the senses have to be subjugated through the process of Pratihara which implies senses are restrained from performing their function. Both visible and Invisible objects of this material world can provide food to our senses. He gives his senses free rein when it is undesirable. According to the Upainshads the five senses are our horses and the mind their charioter. Yoga suggests that it is not the sense only that sees, hears. The mind controls the different functions of these senses. In Pratyahara when we withdraw the senses from performing their functions we have to make the mind the object of their concentration. After drawing back the mind from the senses, the practitioner proceeds further to concentrate his mind on particular object. The flame of a lamp in a place perfectly sheltered against wind, is



Fig. 11.4: Tratak-Gazing at the Candle Flame

as steady as the flame of a lamp in a picture. When the mind of a yogi is completely sheltered against the wind of desire, the self in him shines in its original splendour. He is to Identify himself with that unbroken consciousness,

"As a lamp in a windless place does not flicker—

This is the simile used for the disciplined mind of

a yogi practising concentration on the self".

— The Gita 6-19 —

No doubt it is very difficult to control the mind. But through the continual practice of yoga, the mind can be

controlled. Broadly speaking, yoga is the restraint of all mental modifications (Vrittis) and without concentration that controlling and mastering of life's conditions depends. There are many ways of concentration and many objects to be concentrated upon. The objects can be concrete, physical, abstract or mental. The simple method of study consists in reproducing concrete or physical objects. Before undertaking concentration exercise the practitioner must adhere to the following basic instructions:-

1. Meditation must be done after Asans and Pranayama. Yoga meditation should be performed in a quiet place free from noise, interruptions and extremes of temperature.
2. Meditation should be done without worries tension, anxieties and stress and depression.
3. The practitioner should sit in any meditative pose, i.e., Siddhasan, Sukhasan, Padamasan, with spine and head erect and eyes closed.
4. Pratyahara should be aided by quiet breathing. When we are agitated our breathing is fast and jerky, but if we breathe quietly, the tranquility of mind is promoted. The inhalation and exhalation of breath should be long and rhythmic. Swami Vivekananda has said, "Longer breaths have longer life". Breathing should be done through nose and not through mouth.
5. The time best suited for meditation is early in the morning or late in the evening.
6. Another step in concentration is relaxation or listening attitude.
7. In the practice of concentration Gazing or Trataka (Fig-11.4) is useful of the six main purificatory methods recommended by Hatha Yoga authorities

Tratake or Gazing is one. The aim of trataka is to remove the impurities of the eyes, to influence the optic nerves by concentration of vision and to gain control over the nervous system. One should gaze and gaze on any small object, may be a candle without blinking till the eyes are filled with water.

The wire of a vina snaps if tightened too much and become devoid of music if loosened too much. In the art of partaking of food, the yogi is to act like a properly tuned vina bringing out the best music. If he over eats he becomes a dullard. If he under eats, he becomes weak.

"For him who is moderate in eating and
recreation, temperate in his actions,
Who is regulated in sleep and
Wakefulness, yoga becomes the destroyer
of pain."

—— The Gita 6-17 ——

Yoga meditation is unbroken flow of concentration on a fixed point or object. It also involves, "Inner attention" that is quiet concentrated and relaxed. When the duration of concentration is prolonged in the same line of thought, contemplation naturally follows. It is the continuation of this contemplation that produces the state of trance in which the object of the mind and the mind become one. This state of trance is called samadhi. Patanjali in his "Yog Sutra" has stated that "When the modifications of the mind cease the citta becomes like a transparent crystal, with the power of appearing in the shape of the object presented to it, whether the knowledge the knower or the act of knowing". This state of mind is called samadhi in yoga. The nature of water is that if nothing is mixed with it, it remains clear. If nothing ruffles it, it remains smooth.

But if it is obstructed so that it does not flow, then too it loses its clearness. In these ways it is a symbol of the heavenly powers that are in man. Meditation helps us to become more conscious of our own bodies and listen to what they are telling us. This helps us to recognize and then minimise whatever is causing stress. Communication is always a two way traffic. There is one who speaks and one who listens. The practice of meditation brings us to a state of harmony and equipoise within our bodies, energies and mind. Such a state by its very nature transcends all disharmony and stress. It is a state of wholeness. In meditation we need to take a long detached look at ourselves and then come to terms with the shortfall between what we would like to be and what we actually are. These tasks can be done most easily when we have already achieved a state of harmony. This strength is built of gradually by the practice of regular meditation. Meditation can prove a healing medicine in stress Millions of people have practised it throughout the ages because it clears the mind and opens the heart.

Today, meditation has become accessible to people who may not wish to get involved in a religious tradition but also wish to change themselves and to improve the quality of their lives.

Feed back systems are used in all living organisms. The term Biofeed back implies a training in which a person develops voluntary control over various involuntary functions of the body so as to harmonize his body and mind as a whole. There are four types of waves namely Alpha, Beta, Theta and Delta. Alpha Biofeed is of much use in the study of meditation. The practitioners of yoga develop large quantity of EEG Alpha activity immediately after starting meditation. When meditation continues, the frequency of Alpha wave becomes less followed by development of Theta waves.

12

Stress and Yogic Diet

Good nutrition is of great importance to our physical and mental well-being. It gives us the vigour and stamina we need both to carry on and to enjoy our daily activities. Since most of us eat our most important meals at home, what comes from our kitchen to our dinning tables largely determines the quality of our nourishment. Food contains the nutrients such as protein, carbohydrates, fats, vitamins and minerals that we need for growth, maintenance and repair of our body tissues and energy production. With continued advance in the science of nutritions, the role of nutrition is becoming more apparent in the functions of the digestive system and nervous system. It has been established that carbohydrates is the chief, if not the only, nutrient oxidized by the brain for energy, and when any factor interferes with its normal unitization. Functional disorder will occur. Vitamins of the B complex have been notably associated with function of the nervous system which is to be expected in view of their role in the metabolism of carbohydrate. When deficiency is prolonged structural changes may take place in the peripheral nerves, the spinal cord or the brain. The deficient food intake or utilization does explain the occurrence of neurasthenia in a certain proportion of patients. The studies of Jollife and William have shown the regular occurrence of symptoms when thiamine depleted diet were given to human beings. These individuals became highly irritable quarrelsome and

depressed. They failed to perform their usual tasks, were suspicious, uncooperative and fearful. They had numerous complains concerning gastrointestinal disturbances. Increased sensitivity to pain, shortness of breath, palpitation, and burning of the feet. When thiamine was administered without the subjects knowledge of any change in routine, the symptoms quickly and dramatically disappeared. These experimental observances have been confirmed repeatedly in clinical practice where improvement in nutrition alone has markedly influenced the individuals out look on his environment and his complaints of ill-health. The restoration of mental stability to the deranged pellagrin through the mere use of niacin or of nourishing food has been an outstanding advance in neuropsychiatry as well as in nutrition.

Emotional disorder notably influence the appetite and digestion. Individuals who have been mentally deranged for a long period of time may have been eating poorly and may have experienced gastric distress when they did not eat so that they are thus subject to multiple nutritional deficiencies. Diet should therefore be planned to provide liberal intake of the essential nutrients. The service of food, attractive to the eye, tempting of odour, satisfying to the palate, in cheerful surrounding can be of great psychological value. Many problems of the stomach can have physical causes but the problems can also be a direct result of too much stress. The word "Indigestion" is used to describe the sort of symptoms which occur when a meal is eaten too quickly or after an unusually spicy or fatty meal. Sufferer usually complains of some pain in the centre of the chest and they also feel slightly bloated. It is common for indigestion sufferers to complain of excessive wind and nausea. Many of the individuals who suffer from indigestion do so directly as a result of stress.

It is an established fact that many varieties of diseases can occur due to inadequate supply of vitamins, minerals, amino acids and other nutrients. Each of the essential vitamins has a specific name and aim. Vitamins are effective only when they work in combination with carbohydrates, fats and protein that are provided by a yogic diet. Niacin (vitamins B3) is an important vitamin of the B group. Niacin is absorbed from both the stomach and intestines and stored in all the tissues, forgetfulness, chronic headache and digestive disorders occur due to the deficiency of vitamin B3.

Rich Sources of Niacin (Vitamin B3)

Cereals	*Mg.*
Rice bran	29800
Barley	5400
Wheat flour	4300
Rice puffed	4100
Rice flakes	4000
Wheat germ	2900
Bajra	2300
Maize Dry	1800

Pulses and Legumes

Peas roasted	3500
Soya bean	3200
Red gram, tender	3000
Split kesri	2900

Vegetables	*Meg.*
Turnip Green	5400
Beet greens	3300

Carrot leaves	2100
Lotus stems	1900
Celery leaves	1200
Potatoes	1200

Nuts and oil seeds

Cereals	*meg.*
Ground nuts roasted	2210
Sunflower seeds	4500
Almonds	4400
Mustard seeds	4000
Chilgoza	3600
Cashew nuts	1200
Walnuts	1000

Fruits	*meg.*
Apricots, dried	2300
Passion Fruit	1600
Custard apples	1300
Dates, dried	900
Mangoes ripe	900

Milk is one of the common articles of food. It contains protein, fat carbohydrates, almost all the vitamins various minerals and all the food ingredients essential for maintaining health. The milk diet has proved very efficacious in hyperacidity, poor blood circulation, insomnia, and Respiratory disorders. The milk group includes not only whole, skim, evaporated milk and butter milk but also butter, cheese, and ice cream. Milk is recommended every day for everyone in minimum quantities:-

Eight- ounce cups of fluid whole milk

Children	3 to 4 cups
Teen Agers	4 or more
Adults of all ages	2 or more
Pregnant women	4 or more
Nursing mothers	6 or more

Curd or yogurt is a lactic fermentation of milk. Curd is an important source of protein, vitamins and minerals. It is also rich source of calcium and riboflavin. The protein in curd is more easily digested than the protein in milk. Prof. Metchnikoft, a Noble prize winner, Russian bacteriologist has said, "Premature old age and decay could be prevented by taking sufficient curd in the daily diet. The body is slowly being poisoned and its resistance weakened by man's normal diet and that this poisoning could be arrested and the intestinal tract kept healthy by regular use of curd". Curd is Extensively used in the form of butter milk and lassi. Milk curd Honey fruits and green vegetables occupy very important place in yogic diet. Honey is one of Nature's great gifts to mankind. Honey has nutritional and medicinal properties. The sugars in Honey are glucose, fructose and sucrose. Latest research indicates that the pollen in honey contains all 22 amino acids, 28 minerals, 11 enzymes, 14 fatty acids, and 11 carbohydrates. Filtering bottling and cooling to protect its flavour, remove the pollen grains and do not leave the honey as a pure product.

Honey (Value per 100gm edible portion)

Food value	Minerals and vitamins
Moisture 20%	Calcium 5mg.
Protein 0.3%	Phosphorus 16mg

Minerals 0.2%	Iron 0-9mg
Carbohydrates 79.5%	Vitamin C 4mg.

Honey is considered best food for the heart. Honey is easily digested and assimilated. It can build haemoglobin in the body. It is highly beneficial in the treatment of respiratory ailments Insomnia, Skin Diseases, Irritating cough and diseases of stomach.

Pantothenic Acid (Vitamin B5) is anti-stress vitamins. This vitamin is a part of the enzyme system which plays very significant role in the metabolism of carbohydrates, fats and proteins and in the synthesis of amino acids and fatty acids. This vitamin is involved in all the important functions of the body. If stimulates the adrenal glands and increases production of cortisone and other adrenal hormones. It is primarily used as an anti-stress factor and protects against most physical and mental stress and toxins. It also helps in maintaining the normal growth and development of the central nervous system. It also provides protection against any damage caused by excessive radiation. The rich sources of pantothenic acid (Vitamin B5) are:-

Daily Food Guide

	Child	Preteen and Teen	adult	Aging Adult
milk or milk product (in cups)	3-4	4or more	1-2	1-2
green & yellow vege-tables (in servings)	1-2	2	2	at least 1
citrus fruits & tomatoes (in servings)	1	1-2	1	1-2

		2	3	4
Potatoes, other fruits & vegetables (in Servings)	1	1	1	0-1
bread, flour & cereal (in servings)	3-4	4 or	3-4	2-3
butter or margarine (in table spoons)	2	2-4	2-3	1-2

Dry oat meal, Wheat flour, Soya beans, Split peas, Lentil, Mushrooms, Broccoli, Cauliflower, Sunflower seeds and Cashew nuts.

There is another vitamin called vitamin B6 (Pyridoxine) which is of great use in the treatment of stress and insomnia, psychoneurosis, mental irritability sleeplessness, general weakness and mental stress. This vitamin helps in food assimilation and protein and fat metabolism. It activates many enzymes and enzymes systems. It helps in the healthy functioning of the nervous system and brain. This vitamin also regulates the balance between sodium and potassium in the body.

The rich sources of vitamins B6 (Pyrodocine) are yeast sunflower seeds, wheat germ, soya beans, walnuts and lentils, lima beans and green vegetables.

Like vitamin B 5 vitamins B 12 (cyanocobalamin) is important for the proper functioning of the central nervous system. It improves concentration, memory and relieves tension stress and irritability. This vitamins is essential for proper utilization of fats, carbohydrates and proteins for physical and mental development. The rich sources of vitamin b 12 are skimmed milk, Cow's milk, curd and egg.

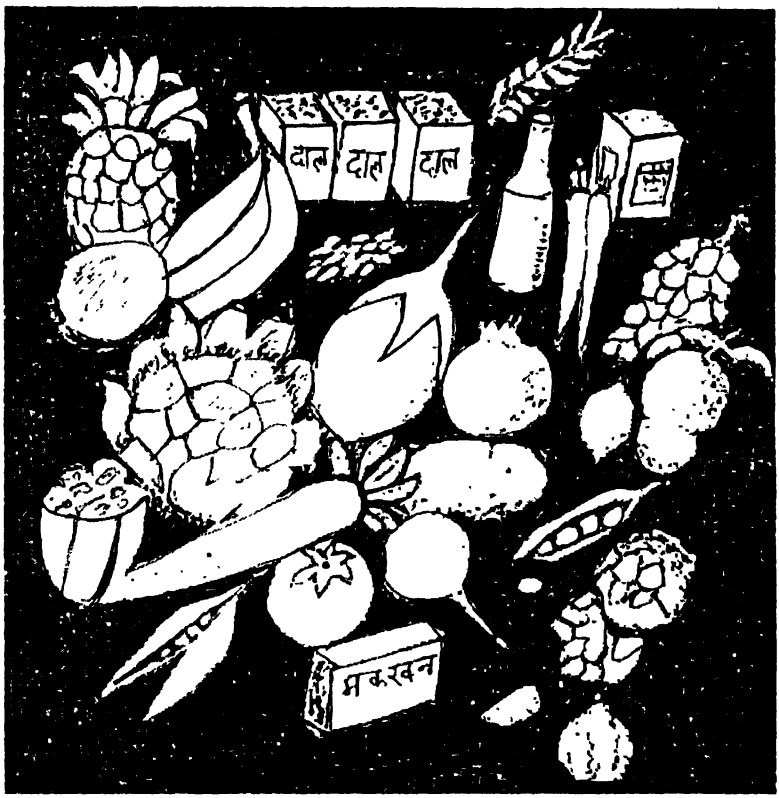


Fig. 12.1: The Yogic Diet

The need for vitamin is increased during stress. The blood vessels become fragile when there is deficiency of vitamin C. Any cancer results in severe stress and this increases the need for vitamin C. One of the important functions of this vitamins is the formation of collagen, a protein substance that cements the cells together. This vitamins is also needed for maintenance of bones and proper functioning of the adrenal and thyroid glands. It protects against all forms of physical and mental stress. The rich sources of vitamin C are found in Red gram, Peas, Maize, Bengal gram, Parsley, Drumstick leaves

Turnip greens, Cabbage, Bitter guard, Radish, Carrot, Beet greens, Cauliflower, Turnips, Tomatoes, Spinach, Potatoes, Ladies-finger, Papaya, Lettuce, Guava, Orange, Limes, Strawberries, Lemon, Pineapples, Lichees, Melon, Mangoes, Pomegranates, Milk and Milk products like vitamins minerals are also needed for the physical and mental development. Minerals are inorganic sustenances like sodium, potassium chloride, calcium, phosphorus, magnesium, iodine, iron, cobalt and copper. They are divided into two sections major and minor. Major minerals include calcium, phosphorus, sodium chlorine, potassium and sulphur. Minor minerals include boron, chromium, cobalt, iodine, zinc, silicon and maganese. Our body cells receive the essential food elements through the blood stream. They must be properly nourished with an adequate supply or required minerals. Minerals help to maintain the volume of water necessary for the life processes in the body. They help draw chemical substances into and out of the cells and keep the blood and tissue fluids from becoming too acidic or too alkaline. There are 50000 enzymes in our body and each enzyme has vitamin and mineral associated with it. Each of the essential food minerals has a specific aim in the body. The deficiency of minerals can cause fatigue irritability, loss of memory nervousness, depression and stress and weakness. Calcium plays a vital role in the maintenance of health. It has been called the prime instigator of vital activities. Deficiency of calcium can cause changes in bones teeth and muscles. Calcium deficient people become nervous and suffer from mental derangements, heart palpitation, insomnia and irritability. Deficiency of calcium in young girls causes late puberty irregular menstruation and anaemia. Rich sources of calcium are Rice, Wheat flour, Soya beans, Bengal gram, Green gram, Curry leaves, Turnip, Amaranth, Cauliflower, Drumstick leaves, Pumpkin leaves, Mustard seeds, Coconut,

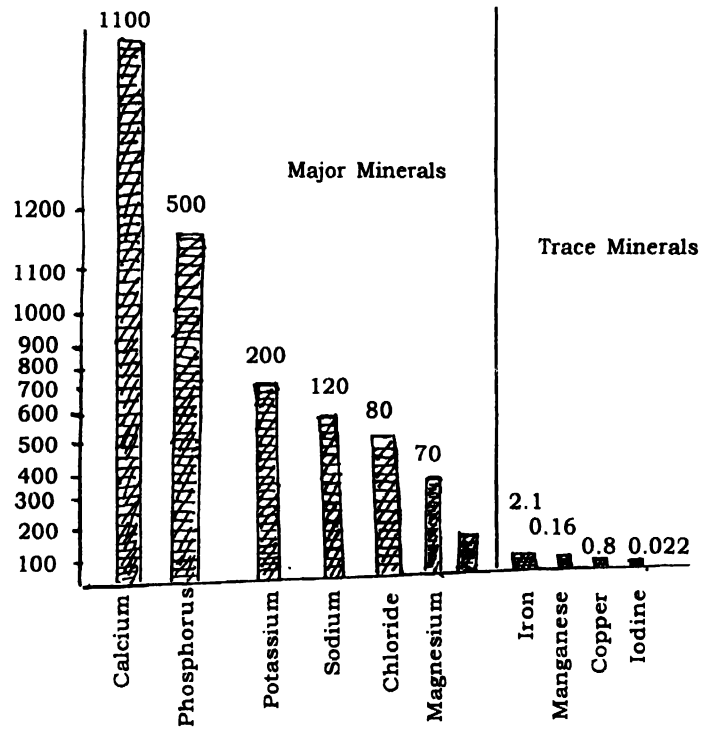


Fig. 12.2: Total Mineral Contents required in the Body

Almonds, Walnuts, Groundnuts, Cashew nuts, Dates, Apricot dry, Limes, Raisins, Lemons, Mulberries, Guava, Cows milk, Skimmed milk, Cheese, Curd.

In our body, iron purifies the blood. The haemoglobin content of the red blood cells is made up of proteins and Iron . All healthy persons absorb from 3 to 11 percent of Iron from food. Iron is stored in the liver, spleen, and intestinal mucosa. Iron is excreted along with the bile, stools, scaling of the skin and sweating. Iron enables the blood to carry oxygen throughout the body and is of great value in helping to remove carbon dioxide from the tissues. The best sources of Iron are whole grain

cereals, pulses and legumes. Green leafy vegetables, fruits such as black currants, water melon, raisins and dried dates. Deficiency of Iron in the diet may cause nutritional anaemia, lowered resistance disease, pale complexion, mental depression and irritability. The science of nutrition has made many advances and discoveries. Recently lot of research has been done on vitamin and it was after the second war that the attention was focussed on proteins. Much has been said and written on the function of trace elements and dietary fibre in human health and disease. As a result of it new concepts like nutritional surveillance and nutritional rehabiltation have been evolved. Despite these advances malnutrition and under nutrition are still prevalent in developing countries. There are millions of people who are under fed and ill-fed. The dietary constituents of food can be classified into proteins, fats, carbohydrates, vitamins, minerals and water. The degree of these constituents varies from one food to another.

In regard to balanced diet the findings of modern dieticians are very akin to yogic principles for maintaining physical types of simple and natural food in such quantities that the need for energy amino acids, vitamins, minerals fats, carbohydrates and other nutrients are met for maintaining physical and mental health. Diet directly or indirectly influences the mind. Food when consumed performs three fold functions, the gross particles become excrement, the middling ones flesh and the fine ones the mind. Just as when curd is consumed, its fine particles form butter. Similarly when food is consumed, the fine particles form the mind. Food, emotions and mind do influence each other. Mind should be free from anxieties, worries, conflicts and unholy thoughts. Even while taking food our minds are crowded with many memories, experiences and stresses. In the Gita, Lord Krishna says there are three

types of food Sattvic, Rajasic, and Tamasic. "Food which promote longevity, intelligence, vigour, health, happiness and cheerfulness and which are sweet bland, substantial and naturally agreeable are dear to sattvic type of men". "Gita—17-8."

Though the Lord undertook in this verse to mention foods which are dear to men of sattvic disposition, rather than those which are sattvic themselves. A man loves that very food which partakes of the Guna predominant in him. "Foods which are bitter, acidic, salty, over hot, pungent, dry and burning and which cause suffering, fried and sickness are dear to the Rajasic type of men".— "Gita — 17-9."

Foods which are taken while they are yet steaming are classed as over hot. Chillies etc. are typical pungent foods. The pain which is experienced in the throat at the time of taking such foods, the burning sensation felt in the tongue, the watering of eyes and nose hiccup etc. — All these are included in the suffering which such foods are known to entail. The sense of remorse one feels after taking such foods is referred to as "soka" or grief's and the distemper caused by them is spoken of as "Amaya" or disease. "Food which is half cooked or half ripe, insipid, putrial, stale and polluted, and which is impure too, is dear to men of Tamasic disposition".—— "Gita—17-10."

Putrial foods are those which contain a naturally offensive smell or which are rendered foul through fermentation of any other chemical process. Food which was cooked the day before is called stale. Foods which are allowed to stay overnight get spoiled and give rise to many diseases in case one choose to partake of them fruits also which were plucked long ago and have accordingly been spoiled should be regarded as stale. Animal foods involving destruction of life such as meat

etc., and intoxicant such as liquor, today etc. which are impure by their very nature or which have been polluted by evil association of any kind—through contact with any impure substance, spot, utensils or person, or because of their connection with foul money earned by unfair or unrighteous means all these are included in the category of impure food. Besides these articles which suffer drugs (Ghanja and Bhang), tobacco, cigarettes, bidis, distilled spirits, impure medicines and all other articles which give rise to tomaguna are Tamasic in character. Discrimination has to be used in regard to the food cooked overnight. There are certain kinds of food which cannot be used immediately after cooking, but have to be kept for hours or even days before being used. There are others which have to be consumed soon after preparation. The fitness for consumption or otherwise of a food article is self-revealed.

Yogic diet aims at harmonious development physical, mental and spiritual. It is nutritious but not rich as some people are inclined to think. A rich diet may produce diseases of the liver kidneys and pancreas. A yogic diet increases efficiency stamina, vigour and vitality. We should eat to live and not live to eat. Lord Krishna says to Arjuna, "Verily yoga is not for him who eateth too much. Yoga killeth all pain for him who is regulated in eating, regulated in performing action, regulated in sleeping and waking". Yoga practitioners should avoid all narcotics, alcohol, drugs and smoke. Yogic diet is sattvic diet and lays stress on fresh simple wholesome and nutritious diet. It includes among other things fruits, milk, curd, cheese, butter, wheat, salaad, soybean, green and yellow vegetables, lemon, orange. In yogic diet fruits, curd and green vegetables are consumed generously.

Yogic Diet for Children

Pre-School children

	3 years	4-6 years
	Veg.g	
Cereals	150	200
Pulses	50	60
Green Leafy vegetables	50	75
Fruits	50	50
Milk	300	250
Fats & oil	20	25
Sugar & jaggery	30	40

School children

	7-9 years	10-12 years
	Veg.(g)	
Cereals	250	320
Pulses	70	70
Green Leafy vegetables	75	100
Fruits	50	50
Milk	250	250
Fats & oil	30	35
Sugar & jaggery	50	50

Water, the elixir of life is a free gift of nature. Most of the diseases and physical ailments prevalent in under developed and developing countries are due to unsafe and impure water. Drinking water should be safe, wholesome free from pathogenic agents and harmful chemical substances and pleasant to the taste. Water is said to be contaminated when it contains parasitic agents and poisonous chemicals. The term polluted water is very akin to contaminated water. Water should be drunk neither too hot nor too cold. A certain amount of water is essential for the functioning of the circulatory and digestive system and to eliminate the body's waste products. We should avoid drinking water while eating because such liquids dissolve the gastric juices and swell the stomach. Water drunk half an hour before and after meals is useful for health. A glass of water at bad time on getting up in the morning will wash the organism. Today we are facing lot of pollution explosion besides many other explosions. The problem of rapid increases in population is linked with the problem of feeding the hungry millions. The over population coupled with threats of starvation, hunger, malnutrition, ill health stressful life pose a serious threat. Indian diet is extremely deficient in proteins nourishing and protective nutrients.

Yogic Diet for Adolesent Boys and Girls

	Boys	
	13-15 years	16-18 years
	Veg.g	
Cereals	430	450
Pulses	70	70
Green Leafy vegetables	100	100
Fruits	30	30

Milk	250	250
Fats & oil	35	45
Sugar & jaggery	30	40

Girls

13-18 Years Veg (g)

Cereals	250
Pulses	70
Green Leafy vegetables	150
Fruits	30
Milk	250
Fats & oil	35
Sugar & jaggery	30

Yogic Diet for Adult Man and Woman

	Sedantry work	*Moderate work*
For man	**Veg.(g)**	
Cereals	400	475
Pulses	70	80
Green Leafy vegetables	100	125
Fruits	30	30
Fats & oil	35	40
Sugar & jaggery		40

	Heavy Work
For man	**Veg.(g)**
Cereals	650
Pulses	80
Green Leafy vegetables	125
Fruits	30
Fats & oil	50
Sugar & jaggery	55

	Sedantry work	*Moderate work*
For Woman		
Cereals	400	475
Cereals	300	350
Pulses	60	70
Green Leafy vegetables	125	125
Fruits	30	30
Fats & oil	30	35
Milk	200	200

	Sedantry work
For Woman	
Cereals	475
Pulses	70
Green Leafy	

vegetables	125
Fruits	30
Fats & oil	40
Milk	200

According to official data 60% of our children and 50% of expectant mothers are suffering from anaemia. Besides population explosion there is problems of food adulteration in the market. Adulteration of foods involve many techniques substitution, abstraction concealing the quality, putting up decomposed foods for sale, giving false labels and addition of poisonous things. These techniques vary from one part of the country to another. One out of every sixth food item is adulterated. According to data released by the Central Bureau of Health Intelligence milk and its products followed by edible oils. Vanaspati, spices and cereals have the highest percentage of adulteration. Addition of water, removal of cream, addition of starch, paper pulp are some common types of milk adulteration. Ghee is adulterated with vanaspati and animal fat. Rice and wheat are mixed with stones, sand and mud to increase weight, wheat flour is mixed with soap, stone powder and chalk powder. Bengal gram flour is adulterated with lathyrus flour and maida with singada flour. Mustard oil is adulterated with argemone oil which is highly injurious for health. Tea leaves are adulterated with exhausted old tea leaves and dust, black gram husk, saw dust, and cashew husk. Coffee powder is adulterated with roasted dates powder tamarind seeds and hush powder. Honey is adulterated with sugar and jaggery and boiled with empty beehives. Medical experts say that energy drinks should carry official health warnings similar to those of cigarette packets, as fears grow that they could pose major health risks. Millions of young people down the drinks each weekend mixed with spirits such as vodka to get an

energy boost in night clubs and bars. Catherine Collins British dietician has said. "The effects of mixing high caffeine drinks with a depressive drug like alcohol have unknown effects on people's hearts. If you already had an underlying heart problem. Drinking of this stuff could be the thing that tips you over the edge".

Why our forefathers were more stout, sturdy and healthy than we are? They ate wholesome foods like milk, ghee, butter, fresh vegetables and fruits. They could not think of the fast food, junk foods, cellophane wrapped sandwiches, hot dogs, hamburgers, ice candies, colas, cakes and chocolates. Nor would they dream of polished rice, frozen meat, food addictive and poisonous pesticides. During their time there were no schools of nutrition, dietician, and beauticians. The diet theories like, "Menu theory" and "The caloric theory" were unknown to them.

The yogic diet is sattvic diet. It promotes vigour, health and longevity. It is non-stimulating health building and energy producing food. It develops the brain, and keep fit the main systems of body known as nervous system, digestive system and circulation system. Yoga in totality including yogic diet can bring about a change for the betterment of brain in this world of stress and strain, struggle and strife.

13

The Yogic Relaxation

(Shavasan)

What is this Life, If full of care

We have no time to stand and stare

— H.W. Davies

Modern man feels tense overwrought, over busy, nervous and anxious. He can neither cope with nor-escape from the relentless demands of modern Life. He misuses the hours of leisure, rest and relaxation. Some feel relaxed in coffee houses, clubs, bars, hotels and night clubs. Others feel relaxed while playing at cards or Idle gossips, seeing blue movies reading cheap fiction. Modern man takes recourse to drugs, happy pills, tranquilizers and beverages which may give him temporary relief and respite but in the long run they prove disastrous to his mental and physical health.

Relaxation is Art but it is both Art and Science in yoga. When body and mind are made to overwork they are exposed to stress and strain. In order to maintain balance between the activities of mind and body it is necessary to give rest to the body which is like a complex machine.

Yogic Relaxation is not lethargy or escape. It does not mean stillness or inactivity. Yogic relaxation implies becoming more alive and aware then one usually is. The

necessity for more pressing than it ever was. Modern man says, "Yes, yogic relaxation is fine but I haven't time". He does not realize the importance of Yogic Relaxation which can refresh him and release his tension, nervousness and anxiety. In yoga controlled breathing and controlled relaxation have enrative value. Cicero has said, "Relaxation is the source of creative thought. Only the man whose mind is like lighting". The art of yogic relaxation can be acquired. Everyone should know how to relax consciously for a couple of minutes every day. So that he can feel relaxed in any situation. For a layman, it is essential to know the anatomy of the muscle. In human body there are two types of muscles voluntary and involuntary. The voluntary muscles are attached to the skeleton and allow us action and movement at will. The involuntary muscles surrounding the ducts of the body constitute the greater part of the hollow organism. These muscles relax and contract in automatic movements and are free from voluntary control. It is the nerve which stimulates the muscle to action. The muscle can be compared to an electromagnet and its nerve to the electric wire which connects it to the brain. A third type of muscle tissue is found known as heart muscle. This is exclusively found in the heart. It is involuntary and yet possesses certain characteristics similar to voluntary muscle. The one characteristic which is common to all three varieties of muscle is contractibility, a muscle can alter its length and breadth easily and rapidly. Some people do jogging, warm-up and physiotherapy exercises. No doubt, these exercises are effective for some part of the body. These exercises tone up the muscles and improve digestive system.

Stretching exercises and jogging force the lungs into working more and more when more oxygen is needed by the heart and other muscles in the body the lungs

will have to work more and more. The muscles of our body need oxygen in order to convert fat into energy. The circulatory system is also affected. If there is no sufficient supply of oxygen.

Yoga treats human body as a flower. In yoga relaxation strain, stress, stretching are not involved. Yoga relaxation tones up not only muscles, ligaments and joints but also all parts of the body. The yogic relaxation is super relaxation which in a few minutes releases mental tension, stress and fatigue. The muscles contract as and when required in response to a message from the brain centres. During sleep man withdraws from the outside world and the conscious mind remains passive. It is only through conscious and voluntary action to disconnect more totally than in sleep those wires which lead to various electro magnets, thus reducing the consumption of narrow impulses to the minimum. This is yogic relaxation or super response. According to Yogic Relaxation it is not the mechanical silence that matters, but silence from within also. In yogic relaxation mind controls the body entirely disconnecting the conductor wires one by one, reducing the flow of current to the electromagnets of the muscles throughout the body almost to nil.

Shavasana

Shavasana is the complete yogic Asans for physical mental and spiritual relaxation. Shavasana, it has been established, reduces the sympathetic nervous activity. It can be used for reducing high blood pressure tension and stress. Shavasana is very popular and highly powerful asan. In the classic texts, "Hatha Yoga Pradipika" this pose is called shavasana and in Gheranda samhita it is named as Mrtasana. Both shav and mrt means corpse or dead body. This asan is also

called total relaxation pose. This asana appears to be simple but the technique is not so simple. Today, when the stress and strain of life are increasing rapidly shavasan is the only asan that provides right relaxation to our psychophysiological system.

Technique

On a soft carpet or blanket of folded rug lie full length on back with arms away from the body with palms facing upward and feet slightly apart. Close the eyes and mouth and withdraw the consciousness by stages beginning with the feet, the ankles, the knees, the abdomen, the chest, the neck, and the face. Finally keep the mind free. Start breathing deeply slowly and rhythmically. The practitioner at the final stage of this asana should feel that his body is motionless like a dead body, sinking in the ground. In this asana all tissues, nerves and muscles are to be relaxed with the mind. Simply lying on the floor, closing the eyes and breathing slowly does not mean shavasan. The technique of this asan must be followed carefully. Rhythmic and deep breathing are absolutely necessary for concentration which gives complete relaxation.

Benefits

Shavasana is an Excellent asana for complete physical and mental and spiritual relaxation and refreshment. Tension, Irregular breathing or faulty breathing cause many diseases. Rhythmic breathing in shavasana is highly beneficial for the body and mind. This asana removes all mental tension, stress, or strain. It also eliminates toxins accumulated in the body, recharges organism with prana, restores energy and cures high blood pressure heart ailments. Insomnia nervous disorders and depression. This asana when performed correctly gives rest, peace and tranquility and relaxation to the body and mind.